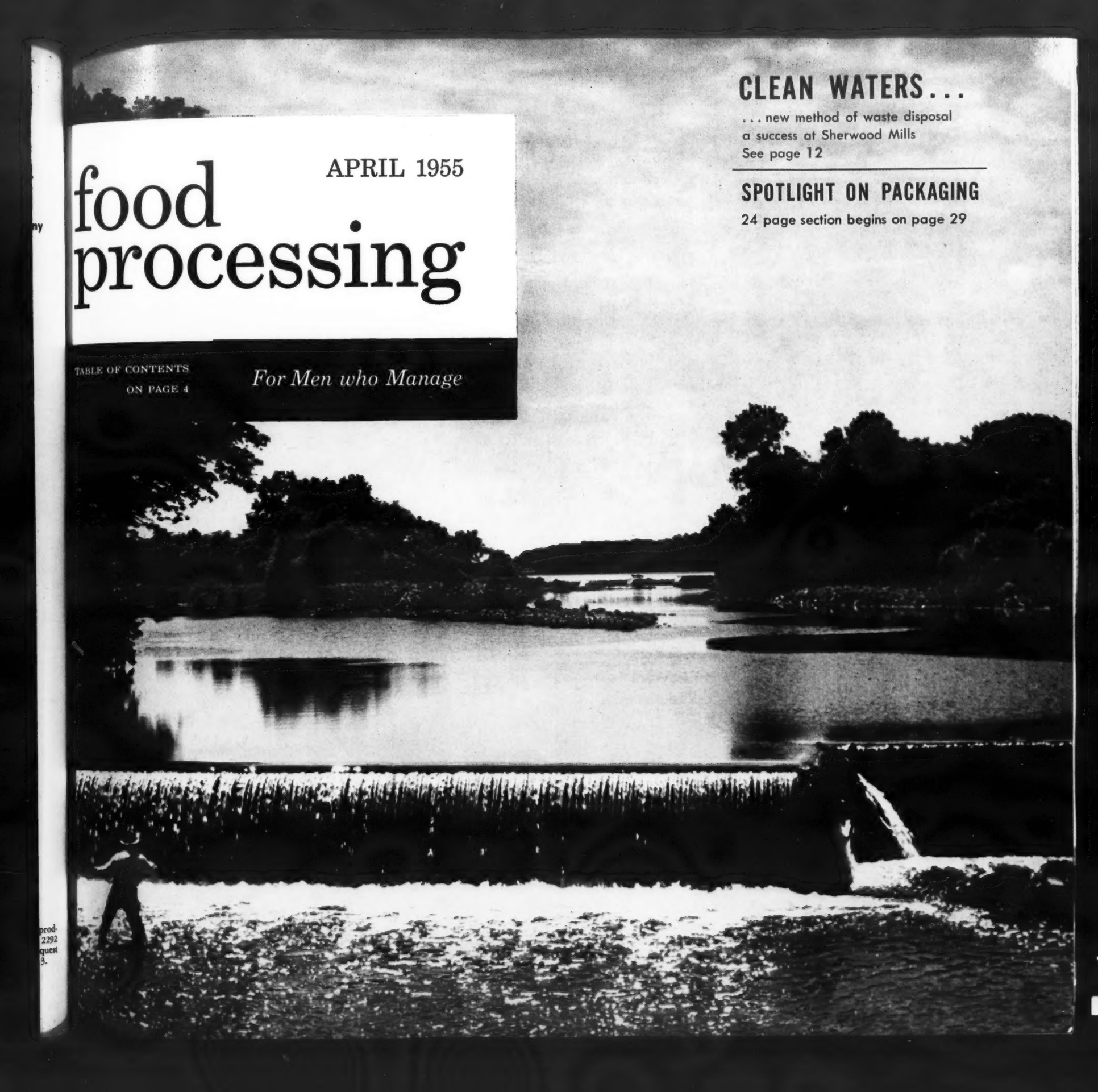

food processing

APRIL 1955

For Men who Manage

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CLEAN WATERS...

... new method of waste disposal a success at Sherwood Mills
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SPOTLIGHT ON PACKAGING

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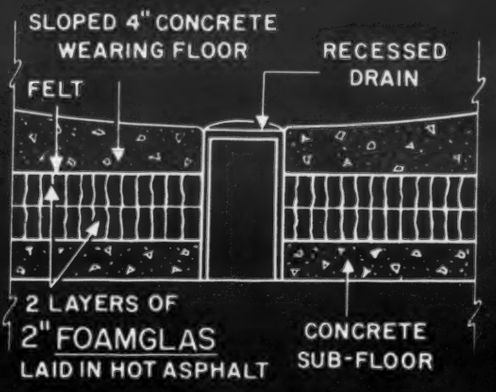
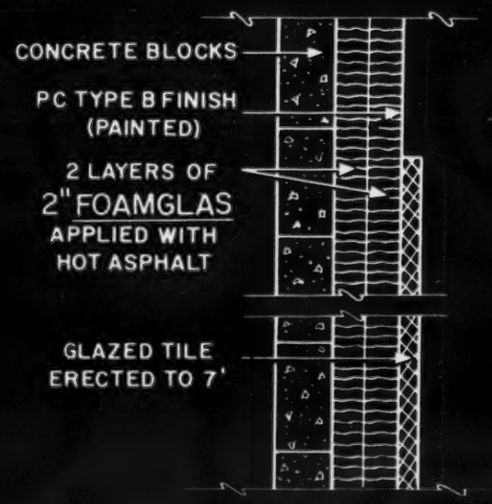
FOAMGLAS®

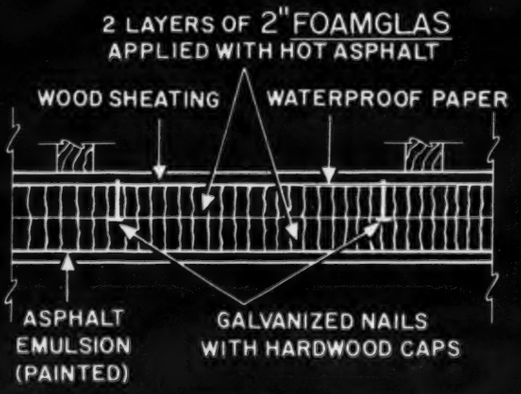
the cellular, stay-dry insulation



DETAIL C
TYPICAL FLOOR SECTION



DETAIL A
TYPICAL WALL SECTION


2 LAYERS OF 2" FOAMGLAS APPLIED WITH HOT ASPHALT
WOOD SHEATING
WATERPROOF PAPER
ASPHALT EMULSION (PAINTED)
GALVANIZED NAILS WITH HARDWOOD CAPS

DETAIL B
TYPICAL CEILING SECTION

"FOAMGLAS insulation proved it stays dry by stopping seepage into our cooler"

reports H. S. Moore, Bohrer & Moore Packing Company, Wapakoneta, Ohio

Use of FOAMGLAS insulation has benefited an Ohio meat packer in several unusual ways. Harry Moore of Bohrer & Moore Packing Company explains it this way:

"We built an addition for a meat cooler and two freezers back in 1950. The back walls of the cooler and one freezer are about four feet below grade. The cooler was completed first. We had a lot of trouble with seepage through the uninsulated wall of the cooler. Later we installed FOAMGLAS on the inside walls of the freezer and we haven't been bothered again with seepage."

Mr. Moore also gives his cellular glass insulation credit for withstanding extremely heavy floor loads, reducing vermin trouble to an absolute minimum and enabling them to maintain economically a constant 38° F. in the cooler and 8° F. in the freezers.

Throughout the meat-packing industry more and more plants are switching to this unique insulation, the only one composed of sealed glass cells which are waterproof, fireproof, rot-proof and vermin-proof. This remarkable combination of properties makes FOAMGLAS the ideal insulation for *your* plant, too.

For more facts on how to install and finish FOAMGLAS, write today.

Pittsburgh Corning Corporation

Dept. FP-45, One Gateway Center
Pittsburgh 22, Pennsylvania.
In Canada: 57 Bloor St. W., Toronto, Ontario

Owner Harry Moore indicates the grade line on the rear wall of his cooler. Bohrer & Moore was bothered with seepage of surface moisture into the adjacent freezer until it was insulated with FOAMGLAS. Engineer & Contractor was Russell Dresher, Wapakoneta, Ohio.

"THAT'S INTERESTING"

Warm days — cool nights make tomatoes red, ripe

Sunlight and heat do not necessarily make good, red ripe tomatoes. Studies at Cornell University indicate that at under 50°F they retain their green (chlorophyll) pigment regardless of how ripe they get; above 50° the green breaks down and red and yellow develop — while at 86° and above, the red breaks down and only yellow appears. Warm days and cool nights allow for best development of red color. (Dyelines and Bylines — American Cyanamid Co. — 30 Rockerfeller Plaza, New York, N. Y.)

It's no picnic when — you forget opener

Gadget patented by Wm. H. B. Cowan of Mississippi is a bottle opener that clips to auto bumpers. Especially welcome to picnickers prone to forget this essential item. (Dodge & Olcott News)

It's hay and it ain't hay

United States grasslands are valued at $13,000,000,000, annually. Fed largely to livestock, they account for 50-70% of the cost of producing meat, milk, and wool. Doubt is cast on soil management systems that fail to include grass sod in the rotation. Lime chemical fertilizers and soil amendments are not substitutes for grass sod, nor for the physical and biological improvements in the soil which perennial roots and associated micro-organisms produce. (Dr. Howard B. Sprague, Pennsylvania State University, in article in Journal of Agricultural and Food Chemistry.)

Effective spray

Pear and other trees are freed from fire-blight by a spray containing a mixture of streptomycin and terramycin. (The Chemical Digest — Foster D. Snell, Inc., 29 W. 15th St., New York)

(*Continued on page 99*)

For more information on product at left, specify FP 2293 . . . see information request blank between pages 2 and 3.

If you want more information on processes, controls or developments of products discussed herein, as you read this issue, ask our READER SERVICE DEPT. . . . use this sheet

April 1955

As you read editorial articles and advertisements which interest you, on which you'd like more information . . . note key number under each. Check back to this sheet . . . verify the key number by name of product discussed . . . check space provided. Fill in your name, title, company, main product and address at the bottom of this sheet and mail . . . no postage, no envelope necessary. Information will come to you direct, without obligation.

√	Key	Description
☐	2293	Glass Insulation
☐	2294	Impulse Steam Traps
☐	2295	Flexible Plastic Tubing
☐	2296	Low Sodium Additives (state application)
☐	2297	Interval Timer
☐	2298a	Antifoam A
☐	2298b	Antifoam AF Emulsion
☐	2299	Sanitary Centrifugal Pump
☐	2300	Low Temperature Insulation
☐	2301	Non-caloric Sweetener
☐	2302	Corrosion-resistant Coating
☐	2303	Tubular Evaporators
☐	2304	Waste Recovery of Colloidal Proteins
☐	2305	Trucks
☐	2306	Packless Diaphragm Valves
☐	2307	Centrifugals
☐	2308	Antifoam Use in Fudgsicle Mix
☐	2309	Fruit Flavors
☐	2310	Silicone Release Agent
☐	2311	Flow Meters, Beer
☐	2312	Caramel Color, Powder
☐	2313	Meters, Liquid
☐	2314	Using Colloids with Milk Solids
☐	2315	MSG in Frozen Foods
☐	2316	Dispensing MSG
☐	2317a	Dill Weed
☐	2317b	Dill Spice No. 1 & No. 2
☐	2317c	Garlic
☐	2317d	Soluble Garlic No. 20206
☐	2317e	Dill Spice "K" No. 1
☐	2317f	Spice "K" No. 2
☐	2317g	Relish Spice
☐	2317h	Oleoresin Turmeric
☐	2317i	Solubilized Oleoresin Turmeric No. 23358
☐	2318	Filter Aids
☐	2319	Monosodium Glutamate
☐	2320	Animal Feed Flavors
☐	2321	Breading Chicken
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☐	2323a	Starch Thickeners
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☐	2324	Chocolate Extender
☐	2325	Packaging Machines
☐	2326	Shadograph Scales
☐	2327	Polyethylene Bulletin
☐	2328	Filling Machine, Powder
☐	2329	Flexible Steel Conveyor Belting
☐	2330	Filler Machines
☐	2331	Simple-design Filling Machine
☐	2332	Neck Band Sealing Machine
☐	2333	Lined Containers for Foods
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☐	2338	Piston Filler
☐	2339a	Can Opener
☐	2339b	Can Crusher
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√	Key	Description
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☐	2342	Magnetic Separator Equipment
☐	2343	Dispensing Inserts Into Cans
☐	2344	Liquids Semi-solids Filler
☐	2345	Progressing-cavity Pump
☐	2347	Electronic Metal Detectors
☐	2348	Cellophane-polyethylene Portion Packs
☐	2349	Salad Mold Jar
☐	2350	Shipping, Display View Pack
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☐	2391	Seesaw Conveyor
☐	2392	Conveyor Chain & Sprocket
☐	2393	Center Drive and Take-up, Conveyor Belt
☐	2394	Walkie Trucks
☐	2395	Magnetic Flow Meter
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☐	2397	Liquid Level Controls
☐	2398	Water Thermostatic Mixers

√	Key	Description
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☐	2399A	Temperature Controller
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☐	2407	Visual Control Board
☐	2408	Tank Gage
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☐	2410	Automatic, Continuous Mixer
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☐	2419	Fungicidal Seed Protectant
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☐	2443	Stainless Tubing & Pipe

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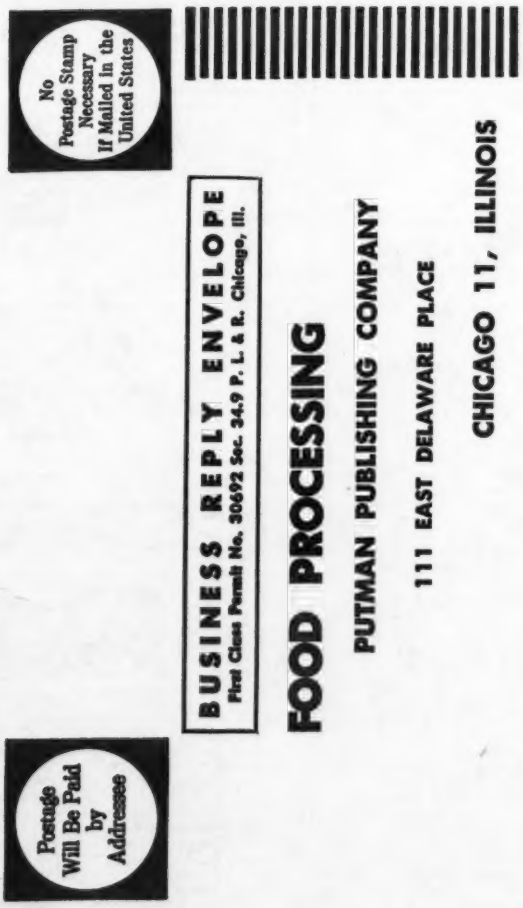
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WOULD OTHERS IN YOUR PLANT also like to receive FOOD PROCESSING without charge?

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food processing

(FOOD PROCESSING PREVIEW)

For Men who Manage

Published in Chicago

FOOD CAPITAL OF THE WORLD

Vol. 16 **APRIL, 1955** No. 4

OVER 30,000 CIRCULATION IN FOOD PROCESSING PLANTS

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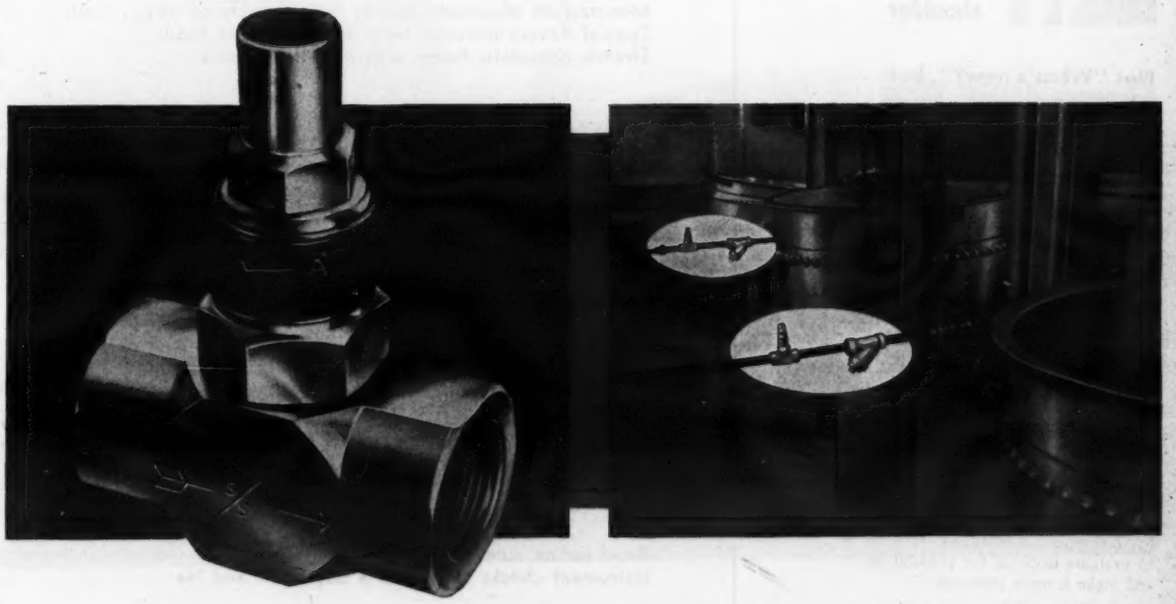
this candy manufacturer* says..

"We cut fuel consumption 8%
...reduced cooking time 25%
...and produced 2 extra batches per day
with Yarway Impulse Steam Traps"



...In addition, they are now able to use an expensive mixing machine that had been taken out of service because of slow cooking.

Trap users in other industries are reporting similar results from the YARWAY Impulse Steam Trap. It costs so little, it does so much.

YARWAYS get equipment hot in a hurry and *keep it hot.* They have only *one moving part.* All working parts including the body are *stainless steel.* They are *good for all pressures.* They are small, *easy to install, easy to service.* Their initial *cost is low.*

Over 1,000,000 YARWAYS already have been sold. Carried in stock by local industrial distributors. Write for name of one nearest you and for free Trap Bulletin.

*Chester A. Asher Co., Philadelphia, Pa. (Candy Manufacturer)

YARNALL-WARING COMPANY
126 Mermaid Avenue, Philadelphia 18, Pa.

impulse steam traps

When inquiring check FP 2294 on handy form, pgs. 2-3

food processing • Volume 16, No. 4 • April 1955

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Over the editor's shoulder

Not "What's new?", but . . .

Editors ask a lot of questions . . . and in turn, we are often asked for opinions and information. Surprisingly enough, the dominant query is not the familiar "What's new?". Instead, processors generally ask *specific* questions which directly relate to their own problems. For instance: "Who makes an ultrasonic mixer?" Or, "Steeping corn the old way is too slow. How can I speed it up?" "Where can I get a meat ball forming machine?" . . .

Who makes . . . "cardboard boxes impregnated with rodenticide? . . . a continous deep fat fryer that will handle my output? . . . automatic case sealing machine? . . . disintegrator for dog food? . . . mustard mill? . . . in-line refractometer?" And so they go.

We like these specific questions. They indicate practical problems . . . help us to evaluate material for publication, and make it more pertinent.

As I said, we ask questions, too. Best opportunity is when we visit processing plants, which all members of our staff do regularly. Check our Packaging Section (featured this month) for examples. For this, our travels took us to Bell Brook Dairy in San Francisco; Diamond Walnut, Venus Foods in Los Angeles — later, I flew to the Hiram Walker plant in Peoria to see the automatic neck-banding operation.

Any question? . . . Step inside.

Karl Robe
ASSOCIATE EDITOR

SPECIAL SERVICE FOR READERS

1. When you want more information, see Reader Service slip opposite page 2

2. If you are looking for information on specific products, use the handy Product Directory . . . lists everything in this issue with page reference, see page 93

3. If you want to subscribe to this magazine, see reader-qualification form opposite page 3

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Food Regulations

News and Interpretations

FDA • Congress • Identity Standards
Meat Inspection • Court Decisions
USDA Grade Standards • State Legislatures

New O'Hara and Delaney bills introduced on chemicals in foods

Food processing executives will want to keep an eye on these bills now being considered on Capitol Hill: (1) HR 4099 and HR 4100 which are identical and were introduced, respectively, by Reps. J. Percy Priest, Tennessee Democrat, and Joseph P. O'Hara, Minnesota Republican. (2) HR 4475, introduced by Rep. James J. Delaney, New York Democrat.

The O'Hara-Priest legislation aims at two major objectives: First, pre-testing of chemicals for use in food; second, the right to use chemicals in amounts found to be "without hazard to man". Present concept is to rule out a harmless amount of a chemical that may be deleterious in quantity. The bills would establish a committee of the National Research Council to review Food & Drug Administration opinion. In reaching decisions as to safety, the government would consider the use to be made of the chemical in question; its toxicity; relation to other substances; etc. Procedures would be similar to those followed to establish tolerances for pesticides used on food crops.

The Delaney legislation also would require pre-testing of chemicals, but would be restrictive on use of "harmful" substances in "harmless" quantities. The regulations would apply to chemicals already in use, as well as new substances, if a question were raised as to safety. Delaney's new bill differs in

(Continued on next page)

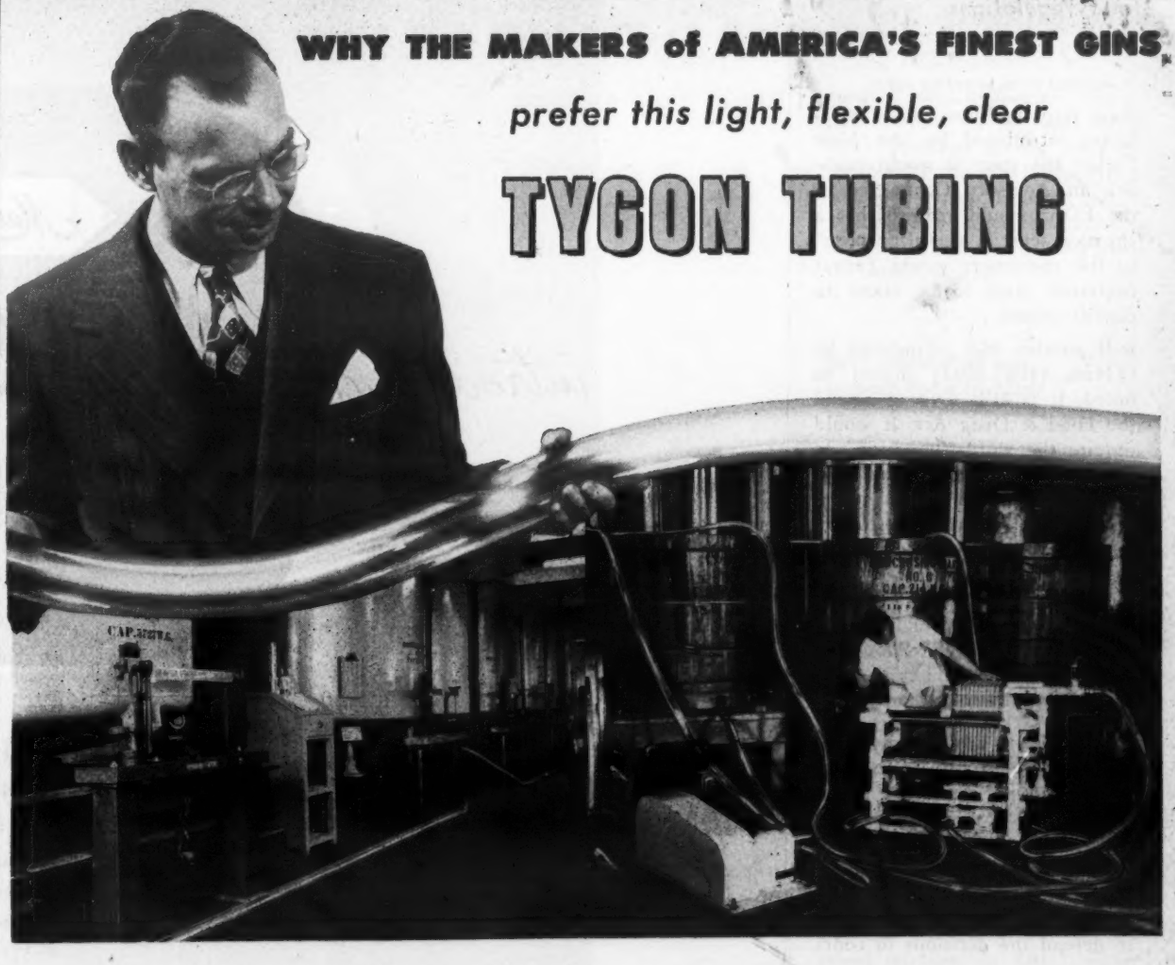
THIS MONTH'S COVER

Our cover this month depicts the positive side of the pollution problem . . . clear water—clean stream. The lead-off article also presents a positive approach to pollution . . . Sherwood Feed Mills of Baltimore, actually turned a messy, colloidal waste into a profitable, high-protein feed supplement, using a tool new to this operation. See page 12 for the results.

WHY THE MAKERS of AMERICA'S FINEST GINS

prefer this light, flexible, clear

TYGON TUBING



The problem of transporting water white gin from bottling tank to bottling machine was long a headache to its makers. The piping had to be flexible to permit the use of portable pumps. Rubber hose began to show signs of deterioration under the action of the alcohol within a few months. Particles of rubber would flake loose to show up only after the gin was bottled in clear glass. And rejections are costly.

Tygon plastic Tubing solved this problem as it solves many problems in safe transport of foods and beverages. Tygon is unaffected by food acids or by alcohols. It is glass clear, enables inspection to spot any foreign matter all along the line. Tygon's light weight appeals to the worker. It is easily handled. Easy to connect and disconnect. It is tough and sturdy, takes floor abrasion in its stride.

And, of course, of first importance to any manufacturer of food products, Tygon Tubing will not contaminate or affect the most delicate food products. It is completely non-toxic, completely safe to use. It can be sterilized. Its polished interior surface facilitates cleaning and its glass clearness automatically sets up high standards of cleanliness.

PRODUCT OF

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Plastics and Synthetics Division

74E

Tygon Tubing Formulation B 44-3 should be specified for food and beverage use. Bulletin T-87 describes Tygon Tubing formulations, gives full technical detail, physical and chemical characteristics. Write for it today. Address Dept. FP 455, Plastics and Synthetics Division, The U. S. Stoneware Co., Akron 9, Ohio.

When inquiring check FP 2295 on handy form, pgs. 2-3

(Continued from preceding page)

these respects from similar legislation introduced by the New Yorker last year: It would establish an Advisory Committee to the FDA; would require that a chemical serve a "useful purpose" to the consumer; would permit contested cases to be taken to district courts.

Still another bill introduced by O'Hara (HR 3692) should be noted. It is HR 3692 to amend the Food & Drug Act. It would require the word "imitation" to appear on the label of foods that do not have an identity standard, or that do not conform to an established standard.

FTC ready for action on Robinson-Patman Act violations

FDA officials are not saying it publicly, but in private they describe Foster's comments on licensing as "overdrawn". FDA must act on the consensus of scientific opinion, officials insist, even though a single person announces decision — and be ready to defend the decisions in court.

Federal Trade Commission enforcement officers are reluctant to comment officially, but are privately pleased to hear that National Food Brokers Association members are being urged to report Robinson-Patman Act violations. A new barrage of complaints and speedier enforcement against violations are expected by FTC, in case the brokers act along lines suggested recently by the Secretary-Manager of the National Retail Grocers Association.

As sales agents, he said, brokers are in a "strategic position to learn of violations almost from the moment of their inception." The grocer group also reminded brokers that identity of complainants to FTC is closely guarded, and classified as confidential under the law.

FTC has not yet set hearing dates on trade practice rules for the frozen food industry, but officials

introducing

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Knowing and anticipating chemical requirements is paramount with all Mallinckrodt research, development and sales people . . . and is reflected in the quality and design of Mallinckrodt chemicals. Mallinckrodt's new line of low sodium chemicals is an example of their accomplishments.

LOW SODIUM — IMPORTANT IN DIETETIC FOODS

Sodium-restricted diets are an increasingly important factor in the control of many diseases and conditions which are complicated by fluid retention. Reduced sodium intake aids in the elimination of fluid, often increasing the efficiency of the kidneys and heart. This makes control of the disease or condition easier.

Low sodium diets, under the supervision of a physician, frequently require special dietetic foods as well as abstinence from table salt. Mallinckrodt low sodium chemicals are a refinement which opens the door to better and easier control of sodium content in low sodium dietetic foods.

These are some of the ways in which dietetic food manufacturers may find it advantageous to use Mallinckrodt low sodium chemicals: *ammonium chloride low sodium* and *calcium carbonate low sodium* in dietetic breads, *calcium chloride low sodium* in cheeses and canned tomatoes, *calcium gluconate low sodium* in canned potatoes and tomatoes, *potassium carbonate low sodium* in cocoa and chocolate, and *potassium chloride low sodium* as an ingredient in salt substitutes.

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POTASSIUM CHLORIDE USP GRANULAR LOW SODIUM
POTASSIUM CHLORIDE USP POWDER LOW SODIUM

You are invited to contact us for any low sodium chemicals in which you are interested. Mallinckrodt is prepared to supply many chemicals to close sodium limits, in recognition of the rapidly growing importance of sodium content in dietetic foods as well as in dietetic pharmaceutical preparations.

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report normal progress toward establishment of a final set of rules. Average elapsed time for completing the job, from petition to effective date, is eight to nine months. The frozen food industry is reportedly about "halfway along the road".

First seizure of low sodium food is made

First seizure of a low-sodium food since label regulations took effect last September involved a consignment of canned spinach. Labeled as containing less than 50 mg of sodium per 100 grams, analysis revealed "substantially more", the FDA announced recently. The regulations are aimed at protecting persons on a restricted sodium diet due to heart condition, and for other medical reasons.

FDA reports 101 other food seizures in the first month of this year that removed about one million lbs of contaminated food from the market. About 148,000 lbs were contaminated by deleterious chemicals, said FDA officials, and the rest contained "decomposed portions or filth." There were three seizures of food products said to contain fewer vitamins than declared on labels, and 11 seizures of watered oysters.

Food consumption should continue at record levels

The national food outlook, reports the Agriculture Department, is good. Consumption of food per person this year is forecast at the same high rate of the past 2 years, or 13% above the 1935-39 average. Stocks of food and feed grains are at record highs, and the prospect is for another year of "large crops".

(*Continued on next page*)

For more information on product at left, specify FP 2296 . . . see information request blank between pages 2 and 3.

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food regulations

(Continued from preceding page)

Fresh orange juice shipments rise — Florida standards adequate for present, USDA feels

Federal standards probably won't be established, at least this year, for Florida fresh, chilled orange juice in fiber cartons. Feeling at the USDA is that Florida should first see how state standards work. After the industry has "become stabilized", officials here indicate, federal standards could be issued.

The Florida standards are to cover (1) untreated fresh orange juice chilled and shipped in fiber cartons like those used for milk, and (2) a chilled orange juice, first treated by heat to prevent spoilage.

It is reported from Florida that more than 5 million gallons of the fresh juice were shipped outside the state last year, mostly to Northeastern and Midwestern markets. Estimates of shipments this year range from 20 million to 40 million gallons, or between 4 million and 8 million boxes of oranges. J. E. Butler, manager of Scenic Citrus Corp. at Frostproof, Fla., is quoted as saying, "There's more demand for fresh juice than there is capacity in the state to make it."

Don't turn FDA policing power into 'licensing' power, chemicals group head urges

While Congress considers these legislative proposals, the Manufacturing Chemists' Association, Inc., continues to press for adoption of a 5-point plan to revise present food and drug laws. On only one point, said Association President William C. Foster, is there "not yet general agreement" — the method by which FDA should be empowered to prevent the sale of inadequately tested or unsafe products.

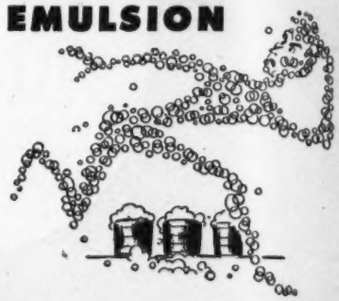
"The chemical industry does not believe that the Food & Drug Administration or any other administrative body should be required to give a final 'yes' or 'no' regarding the use of a food ingredient before it is put into use," said Foster. "This type of control, which is in effect licensing, has been advocated in some earlier proposed legislation and has received some support in industry. This proposal would mean that the FDA, based on its own views of the proper test method and test standards and whether a particular substance meets such standards, must make the decision to permit a new ingredient to go on the market or refuse such permission. It also means that . . . this ultimate decision . . . will finally depend on the judgment of a *single official*. . .

"Under the licensing system, no manufacturer could be sure that his risk investment in food research could pay off. . .

"In addition to these very practical considerations, the 'prior approval' approach involves a major transition in the function of the FDA in the food field

FOAM'S a FUGITIVE

from DOW CORNING ANTIFOAM AF EMULSION



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— the substitution of a *licensing* role for what has heretofore been a *policing* role. . ."

To "strengthen the present statute", satisfy interested parties, "and also the greatest public interest", Foster listed the MCA's 5-point plan, evolved and proposed by the MCA board of directors and the Chemicals in Foods Committee:

1. Add a new provision to the Federal Food, Drug and Cosmetic Act that no new ingredient intended for food use, nor food containing such new ingredient, should be shipped in interstate commerce or used in foods unless the shipper or user submits to the Food & Drug Administration, well in advance of the date proposed for use, his full data on safety.

2. Add a provision that the Administration have a reasonable time in which to review this data.

3. Amend the law to provide that it is a violation to ship such an ingredient (or food containing it) which is unsafe in the manner used or intended to be used, or which has been inadequately tested for safety for such food use.

4. To resolve initial differences between the Food & Drug Administration and the supplier or user of ingredient, add provision for informal conferences.

5. Where such initial differences cannot be resolved, provide that the FDA may have recourse to the Federal Courts.

Civil defense foods committee to study protection activities

A new Civil Defense Foods Advisory Committee to the government, composed mainly of food industry executives, has been established by the National Academy of Sciences and its affiliated National Research Council. The group, chairmanned by Swift & Co.'s research vice president, Roy C. Newton, was named upon request of the Food and Drug Administration.

Two major committee objectives are (1) study of the vulnerability of food processing and warehousing industries to open attack or sabotage by biological, chemical, or radiological agents; and (2) consideration of methods, facilities for sanitizing or decontaminating food plants, equipment, and products in an emergency.

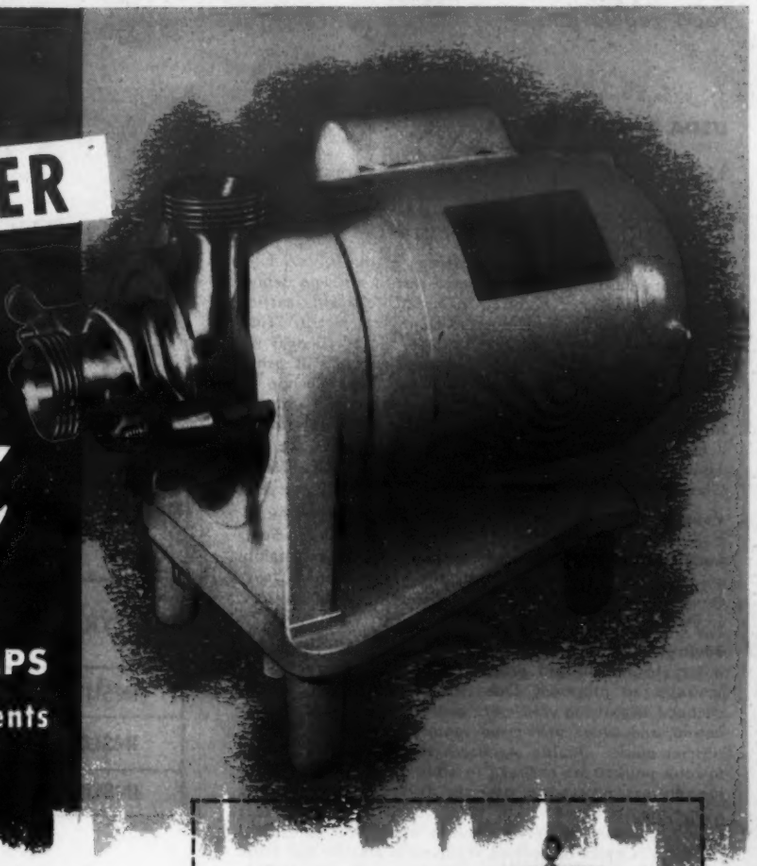
Frank L. Gunderson, Washington technical consultant, is executive secretary of the new committee. Members are: John S. Andrews, Director of Food Research, General Mills, Minneapolis; Robert R. Baldwin, Laboratory Director, General Foods, Hoboken; Gail M. Dack, Director, Food Research Institute, University of Chicago, Chicago; H. C. Diehl, Director, Refrigeration Research Foundation, Colorado Springs; Arnold H. Johnson, President, National Dairy Research Laboratories, Oakdale, Long Island, N. Y.; Emil M. Mrak, Head, Department of Food Technology, University of California, Davis; and George W. Putnam, Vice President, Creamery Package Manufacturing Co., Chicago.

(Continued on next page)

TRI-CLOVER

Nofome

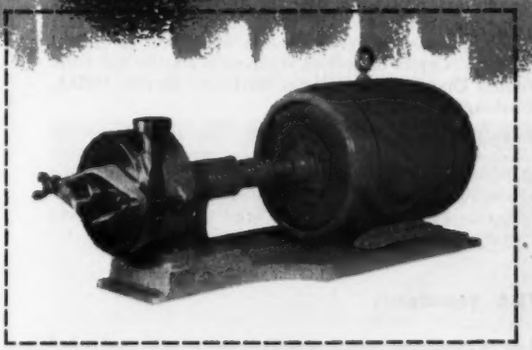
SANITARY CENTRIFUGAL PUMPS for high head requirements



These well-known *"NOFOME"* pumps, formerly made by Specialty Brass Company, have been refined and are offered exclusively by TRI-CLOVER.

Incorporating the latest design and operating developments, including the popular Carbon Rotary Seal, these improved *"NOFOME"* Sanitary Centrifugal Pumps are particularly applicable in beverage, food and dairy applications for meeting high head requirements.

Here are a few of the *"NOFOME"* design features: 3-bladed impeller gives maximum efficiency without foaming or churning . . . heads are smooth—no pockets or crevices . . . heads easily removed for thorough cleaning . . . rotary seals located outside product zone . . . 2 roller bearings assure long life and quiet, trouble-free operation.



• TRI-CLOVER *"NOFOME"* PUMPS are available in either "Pump King" type (top) or Pedestal Mount (bottom) in a wide range of capacities for handling from 1,000 to 280,000 pounds per hour (water or liquids of similar viscosity). Heads up to 260 ft. available. Supplied with patented inert carbon seals, or water-cooled rotary seals for a wide range of liquids and solids in solution.

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P454

When inquiring check FP 2299 on handy form, pgs. 2-3

(*Continued from preceding page*)

USDA Grade Standards

Checklist of new or proposed grade standards issued by USDA follows. Except where noted, complete texts can be secured from USDA, Fruit and Vegetable Branch, Processed Division, Washington 25, D.C.

Soybeans: "There will be no change in the official U.S. Grain Standards for soybeans with respect to class definitions," the USDA announced in March, following earlier proposal of revisions. However, Dept. says it will "continue to study the problem". Other proposed changes requested by American Soybean Association are still pending. USDA reports decision "will be made as soon as possible". They include proposals to decrease maximum limits of foreign materials by 1% in each grade; restrict definition of splits to pieces of soybeans that are not damaged; reduce maximum limit for moisture by 1% in Grade No. 1.

Voluntary Egg Products Inspection: Recent suggested revisions not announced at press time, but considered final, would become effective early in April. Changes slightly modify processing requirements for preparation of frozen egg mixes and blends which have salt, sugar, and other stabilizing ingredients added.

Poultry: Final changes went into effect March 1 in voluntary inspection and grading program for poultry, essentially as proposed Dec. 3. Form of grade marks changed slightly to give more prominence to grade designation, and added protection against unauthorized use of official marks. Quality standards for dressed and ready-to-cook poultry are changed to allow birds — which during normal processing have small areas of skin or a wing joint removed — to be included in lower grades after inspection and certification as wholesome by federal inspector. Copies of revised regulations may be had from Poultry Division, Agricultural Marketing Service, USDA, Washington 25, D. C.

Meat Inspection: Inspectors have been told that whey solids of "food grade" now may be used in food loaves that contain meat. Whey solids, however, have not been approved for use in standard products such as meat loaf and sausage — and officials urge caution in making proper distinctions.

FDA Standards

List of foods for which standards have been established is available from Food and Drug Administration, Washington 25, D.C.

Cheese: A proposal for standard of identity has been made for Samsoe, a cheese produced in Denmark and prospective competitor for domestic Swiss. Proposal originated with the Denmark Cheese Association's New York City office at 17 Battery Place. Study was still pending at press time of the National Cheese Institute's application to amend definitions and standards of identity for Munster, Monterey, and pasteurized process cheese foods and spreads. Officials indicated an order expected soon.

Farina: Only one comment was forthcoming following proposed amendments for enrichment. An order should be issued soon.

Dietetic Foods: Proposal for an option on standards of identity for five canned dietetic foods to include saccharin and Sucaryl has been filed by National Canners Assn.

Coal-tar Colors: Officials are studying numerous exceptions to the proposed ban on FD&C Orange No. 1 and 2, FD&C Red No. 32. Ban may be allowed to stand, be withdrawn, or modified. There would be at least 90 days following publication of decision before either a ban or modified ban took effect.

HERE'S HOW STYROFOAM COMPARES TO OTHER INSULATIONS

INSULATIONS	low "K" factor	superior water resistance	excellent compressive strength
STYROFOAM	✓ Permanently Low. Avg. 0.25	✓ Remains Dry and Assures Constant "K" Factor	✓ Highest Strength-Weight Ratio of Any Insulation
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INSULATION B	✓		
INSULATION C	✓		✓

STYROFOAM

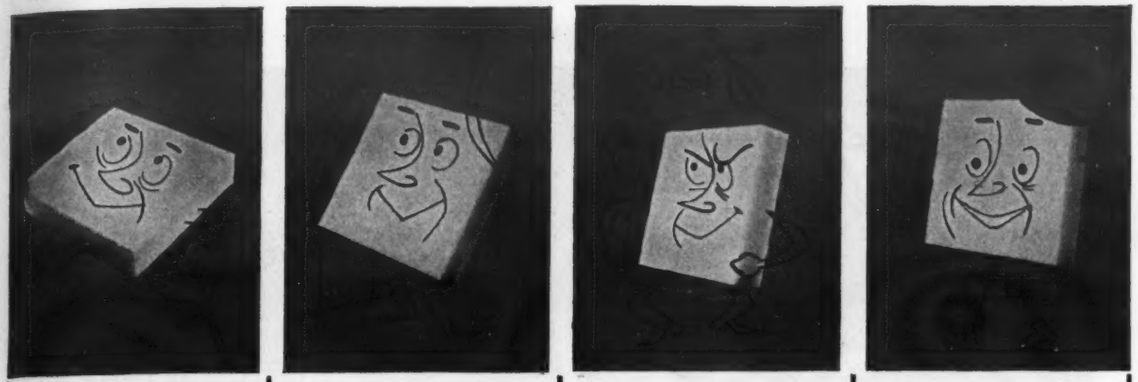
New York Central Railroad selects STYROFOAM® for its long service life

This large, national railroad looked for a low-temperature insulation that would assure long service life, eliminate costly replacements. Styrofoam (Dow expanded polystyrene) proved perfect because of its exceptional resistance to moisture, mold and rot. As a result, Styrofoam was chosen for the new 75′ x 76′ cooler, boning room and freezer constructed for Chicago Dressed Meat Co., Inc., at the Bronx, N.Y., freight station. Its light weight, ease of handling and ability to be fabricated with ordinary tools also paid off in lower installation costs.

The freezer of the Bronx station being constructed. This self-supporting partition separates the boning room and freezer from the cooler. The insulation contractor was A. B. Schreckinger & Sons, New York City. Styrofoam was used on the walls and ceiling as well as on the floor.

THESE ARE JUST A FEW LEADING COMPANIES THAT HAVE CHOSEN STYROFOAM

The Best Foods, Inc.; The Goebel Brewing Co.; Southern Dairies, Inc.; General American Transportation Corporation; General Electric Company; Norge, Division of Borg-Warner Corporation; Kelvinator Division of American Motors Corporation; New York Central System; Swift and Company; Oscar Mayer and Company.



light weight	ease of handling	superior resistance to vermin and decay	low installation cost
✓ Lightest Of All Rigid Insulations. Avg. Density, 1.7 lbs. per cu. ft.	✓ Pleasant—Fabricates Easily with Common Tools. Doesn't Crumble	✓ Has No Food Value	✓ Lowest Cost, Too, Per Year of Service
		✓	✓
✓			✓
			✓

...the most nearly perfect low-temperature insulation ever developed

No other insulating material can match its unique combination of properties

Dow will send you further information on Styrofoam, free, upon request. Please specify if you want general information on Styrofoam or detailed information on its use in low-temperature work, as a perimeter insulation, or pipe covering. Write Dow Plastics Sales Dept. PL 546E, THE DOW CHEMICAL COMPANY, Midland, Michigan, or contact your Styrofoam distributor: *The Putnam Organization, Inc., Chicago, Ill. • Seward-Kauffman Corp., Elkhart, Ind. • Styro Products, Inc., Kansas City, Kansas • Atlantic Foam Products Co., Ipswich, Mass. • Par-Foam, Inc., Detroit, Michigan • Edwards Sales Corp., Minneapolis, Minn. • Floral Foam Products, Midland, Michigan • Styro Sales Co., New York City • William Summerhays Sons Corp., Rochester, N. Y. • G. & W. H. Corson, Inc., Plymouth Meeting, Penn. • The Emerson Co., Houston, Texas • Utah Lumber Co., Salt Lake City, Utah • S & S Sales Corp., Milwaukee, Wis.*

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DOW

When inquiring check FP 2300 on handy form, pgs. 2-3

FOOD INDUSTRY NEWS

New Plants
Companies
Personalities

Union Carbide polyethylene plant at Seadrift, Texas is the company's third devoted to such production. A fourth will go into operation next year at Torrance, Calif. The new Texas plant will add a rated capacity of 60,000,000 lb to the industry, states George C. Miller, president of Bakelite Co., a Division of Union Carbide and Carbon Corp.

Stokely-Van Camp, Inc. has begun production of frozen orange concentrate at a new plant in Haines City, Fla. Present capacity is 1,600,000 cases. Cold storage space is available for 800,000 cases.

Plant is jointly operated by Stokely-Van Camp and Bordo Products Co., Chicago.

American Machine & Foundry Co., announces the first industry-owned and operated nuclear research reactor. A number of industrial concerns have been invited to participate on a cooperative basis. These include food and agricultural concerns, among many others such as petroleum, chemical, and machinery. Project will cost over $1,000,000.

Chas. Pfizer & Co. recently held open house at its Agricultural Research and Development Farm, Terre Haute, Ind. Members of the Commercial Chemical Development Association and Chemical Market Research Association

Pfizer 700 acre Terre Haute development farm

toured the 14 buildings and 3 laboratories devoted to basic and applied research in the field of nutrition and veterinary medicine. The facilities also handle technical service in the agricultural field.

Stock interest in Control Cells Corp. has been purchased by Cherry-Burrell Corp. and Camef Equipment Corp. of Chicago. Headquarters of Control Cells are at Boulder, Colo. Applications of this equipment in trucks, weighing platforms, and conveyors were described in FOOD PROCESSING last month. Cherry-Burrell will handle applications in the dairy industry, Camef in the transportation field.

(*Continued on page 92*)

The Convention and Exhibit Schedule will be found on page 94 of this issue

Here, Jones Dickinson of Sherwood Feed Mills observes the self-desludging centrifuge which makes the continuous waste recovery system possible. Sludge discharges to tank in center foreground, from which it is pumped by a Moyno pump to either drum dryer or to conveyor for blending with pressed grain as it goes to dryer

Protein sludge as discharged from centrifuge

Here is sludge after going through dryer, ready to add to regular feeds

new tool for solving waste disposal problems

Automatic-desludging centrifuge not only solves waste problems at Sherwood Feed Mills . . . but recovered protein solids pay for installation in eight to twelve months

JONES DICKINSON, Vice President,
Sherwood Feed Mills, Inc.
as reported by **FP staff**

Problem: In waste waters of food plants occur colloidal, gelatinous, and other solids too fine to remove by screening. These are difficult to recover without elaborate chemical treatment and settling procedures. It has been possible to remove such solids from waste waters by centrifugal force in excess of 5000 times gravity. However, it has not been practical to carry out such a centrifugal separation on a plant scale.

At Sherwood Feed Mills in Baltimore, management was interested in this problem of colloidal wastes from two aspects. They received spent grains from local breweries, which they dried, sold as animal feeds. Before drying, water is pressed from the grain. This water, contained protein insolubles which were: (1) a waste disposal problem, and (2) valuable for their nutrient content—provided an economical method of recovery could be developed.

Batch operation of bowl centrifuges having sufficiently high gravitational force is inherently an expensive operation and not feasible for waste recovery operations. Continuous centrifuges here-

tofore used in this country have not proven satisfactory for this type of material because in the liquid phase separator, the sludge or solids are discharged through a series of nozzles of a small diameter. (Usually from 1m/m to 2m/m.) A particle must be considerably smaller than this nozzle in order that it may be discharged continuously and without blockage.

Since the solids particles do vary a great deal in waste recovery operations, stoppage of this liquid-phase nozzle separator is very common. Use of this type equipment is uneconomical also, due to the fact that a considerable amount of liquid must be discharged along with the sludge. Preparatory treatment of the waste material to make it suitable for recovery by the nozzle separator is often more costly than is the actual cost of the centrifuges. Basket type solids phase separators are impractical and uneconomical in view of the slimy nature of the waste products and, also, to the very fine particle size of the solids which must be recovered in operations.

Solution: A design new to this country, based on the continuous centrifuges for solids separation, has been applied to this waste recovery problem. The operation of its bowl seal and sludge discharge mechanism is based on the following features. The exterior periphery of the bowl has a series of large discharge slots provided for the purpose of sliding sludge from the inside of the bowl to the sludge chute, located beyond the exterior of the bowl. During clarification of a product these slots are kept closed with a ring valve, which receives a hydrostatic upthrust from a small stream of water, remotely supplied by a fine jet. While only a thirty-pound water pressure is required, the centrifugal force develops a final pressure of 1000 psi under the valve.

Split second desludging

Whenever the bowl has been filled with a heavy mastic sludge, this closing water supply is shut off (by time-cycling) and an operating jet causes the water under the ring valve to be discharged. The sludge on the inside of the bowl reacts with a pressure of 650 to 700 psi against the shamfered inner surface of the ring valve, pushing it downward. At the same time, all of the sludge discharge slots are opened and the sludge is thrown out of the bowl centrifugally. This desludging phenomenon requires only a fraction of a second.

Immediately following the desludging operation, the bowl is again closed with a stream of water under the ring valve. The feed supply is shut off for approximately five seconds during desludging. However, the centrifuge travels at full speed at all times. In some operations, the bowl can be de-

(Continued on next page)

Are you on the dieter's shopping list?

Many dieters can't (or won't) use sugar-sweetened products! They know SUCARYL*—they've used it in their homes. They'll buy—actually shop for—your* SUCARYL*-sweetened line.*

If your product is on the nix list of those who *want sweetness without calories* in their controlled diets, get them back in a hurry with a new line sweetened with SUCARYL.

For SUCARYL offers all the clean, pure sweetness of sugar, without the calories—and without the bitterness or clinging, sharp taste of other synthetic sweeteners. And SUCARYL—an entirely new sweetening substance called Cyclamate—will adapt readily to your processing methods.

Check on it. But do it soon—while the big and busy diet market is forming new brand buying habits. Start with our free new SUCARYL descriptive book. Write: Chemical Sales Division, Abbott Laboratories, North Chicago. Abbott

Stop the diet shopper with **SUCARYL**®
(Cyclamate, Abbott)

When inquiring check FP 2301 on handy form, pgs. 2-3

(Continued from preceding page)

sludged every 45 to 60 seconds. In other operations, desludging is done every 45, 60, or 120 minutes. The actual viscosity of sludge or its moisture content can be changed quickly by increasing or decreasing the normal operating time between desludging operations.

By adding an automatic timing device to control the feed and desludging water with solenoid valves at predetermined intervals, the entire operation becomes so completely automatic that labor is required for periodic inspection only. In this manner, a large number of these automatic desludging centrifuges can be operated by one master timer. The desludging of each machine is timed so that no two machines will desludge at the same time. The power and water demand at any one time is thus held at a minimum.

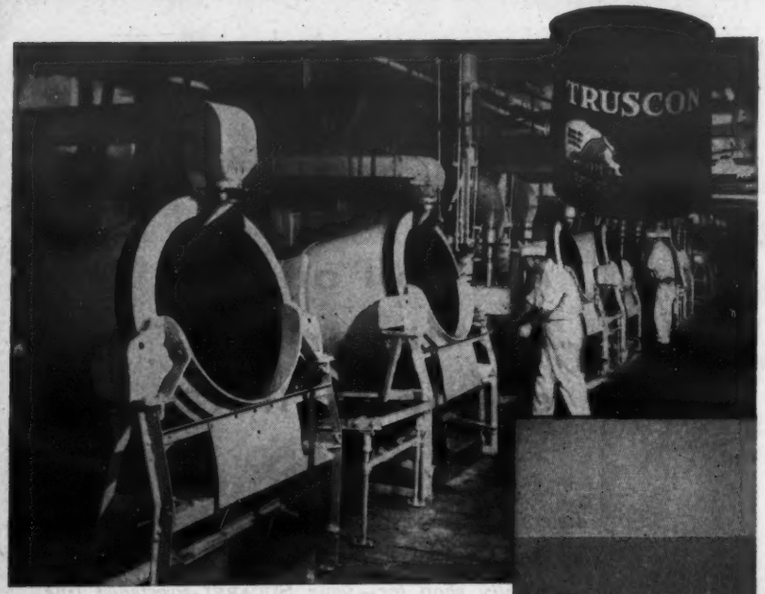
Data on processing and capacities

In Sherwood's operations, the brewers grain is received by truck at a common loading tank from where a bucket elevator delivers the wet grain to two Davenport grain presses. The pressed grain falls from the presses into a screw conveyor. At that point, the grain contains approximately 65% moisture. The presswater is gravity fed from the presses to one vibroscreen 24" x 72", single deck operation. Prior to screening, the presswater contains approximately 15% solids by volume. The 80-mesh screen removes all but about 8% of the solids by volume. The remaining 8% are of a protein value from 45 to 58%.

Results: At Sherwood, waste press liquor which formerly was a disposal expense has been turned into profit. The protein rate of their feeds has been increased by from 1½ to 2%. In addition, the feed also benefits from the vitamins and amino acids values formerly wasted.

The desludging centrifuge will remove the fine solids in the presswater down to 0.1 to 0.3%

(Continued on page 19)



Solve 2 Big Problems With One Famous Paint!

1. STOP CORROSION and 2. BOOST MORALE with . . . TRUSCON SPEED REX!

Speed Rex, which provides *years* of protection against moisture, fumes, fungus and other corrosive elements, does *double* duty when used in any of the colors of Truscon's "Eye Comfort Color Harmony" system. This is a scientific color system that boosts workers' morale by improving "seeing" conditions, reducing fatigue, eliminating glare and sharp contrasts.

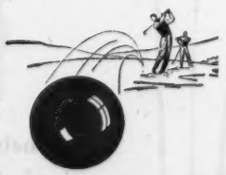
THIS SYSTEM WORKS!

Eye Comfort Color Harmony is actually a very *simple* color system, based on the scientific fact that employees work better when "seeing" conditions are favorable . . . *because they become less fatigued.*

FREE SURVEY

You can find out whether your plant needs color "treatment" by sending coupon below. There will be no obligation to you . . . absolutely.

Write for color card showing true "Eye Comfort" colors.



IT'S ALIVE! IT'S DEVRAN!

Devran (Epoxy Resin) enables "Speed Rex" to bounce back from hard knocks as well as from chemicals. Actually, a ball of solid Devran has more bounce than a golf ball!

TRUSCON Laboratories
Division of Devoe & Raynolds Co., Inc.

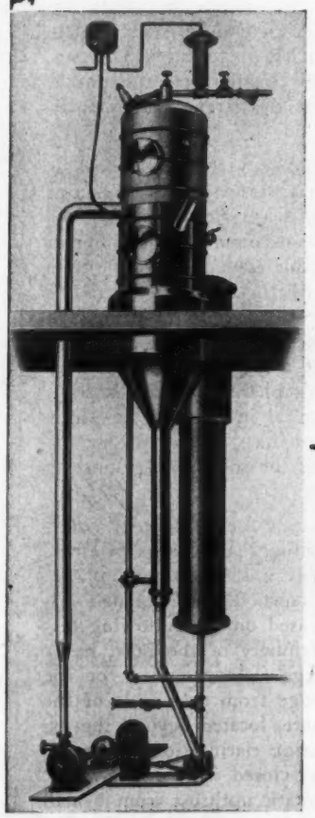
Truscon Laboratories
1700 Caniff, Dept. H-1
Detroit 11, Michigan

☐ Arrange free plant survey—no obligation.
☐ Send descriptive literature on Speed Rex and "Eye Comfort"

Name
Firm
Address
City Zone State

When inquiring check FP 2302 on handy form, pgs. 2-3.

Tomato Puree process report:



Superior Color, Flavor

Mojonnier Tubular Evaporator, Model TF2, similar to that installed in large eastern tomato puree plant.

Concentrated puree far superior in quality and color to that obtained by the open kettle method, is the report of a large eastern tomato processor. After washing, pulping, and passing through a Mojonnier Tubular Heat Exchanger, the juice enters the Mojonnier Tubular Evaporator. This unit operates with a product temperature of about 135° F. and produces as much as 1,400 gallons of puree per hour at a specific gravity of about 1.048. A vari-speed positive pump provides for continuous unloading of the Evaporator into one of three 1,000 gallon tanks, where the puree is standardized with raw juice to the desired specific gravity, depending upon the intended use.

● For complete information on this improved process for highest quality tomato puree, write today to:

MOJONNIER BROS. CO., 4601 W. Ohio St., Chicago 44, Ill.

QUALITY Mojonnier YOU CAN TRUST

TUBULAR EVAPORATORS

Mojonnier Engineered Equipment for the Food Industry includes: Vacuum Pans • Cold-Wall Tanks • Compact Coolers • Conveyors • Zone-Control Vats • Evaporators • Tubular Heaters • Tubular Coolers • Milk Testers • Vacuum Fillers • Case Washers • Bulk Coolers • Bulk Tankers • Balance Tanks • Cut-Wrap Machines • Overrun Testers • Culture Controllers • Processed Cheese Kettles • Butter Print Scales

When inquiring check FP 2303 on handy form, pgs. 2-3.

MACK'S GOT IT!

THE ULTIMATE IN C.O.E. DESIGN

only MACK cab-forward design

Built in sizes from 20,000 lbs. to 28,000 lbs. G.V.W. as straight trucks, and as a tractor in the 40,000-53,000 lbs. G.C.W. range.

UTMOST COMPACTNESS

Twelve inches shorter overall length than other C.O.E. designs . . . Up to 50 inches shorter than conventional types . . . Saves a foot in overall length for any given size body or tractor-trailer combination . . . Permits a foot longer body for same overall length as other make C.O.E.'s.

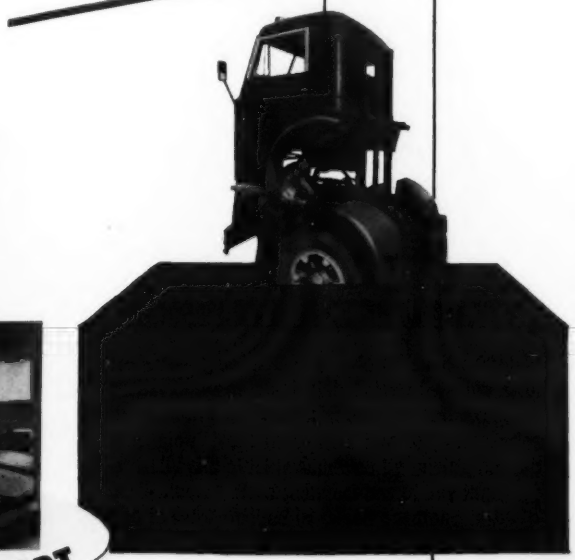
GREATER MANEUVERABILITY

Shorter turning diameter . . . Easy steering . . . Simple, convenient controls . . . Better ability to get in and out of tight quarters . . . Easier handling in heavy traffic . . . For example, with cab-to-rear-axle dimension of 81½" turns can be made in a 34-ft.-diameter circle.

MAXIMUM PAYLOADS

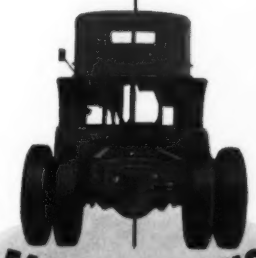
Light chassis weight consistent with Mack quality standards, plus basic design that puts more of the chassis weight on the front, permits maximum payloads . . . Greater bulk capacity, too, because of compactness.

...gn best fills all 10 basic C.O.E. requirements



DRIVER COMFORT

Improved seats and driver's position in a wide-door cab that's insulated, fully ventilated, easily heated, and fume-proof . . . Low, wide step . . . Easy entrance and exit—no body contortions getting in and out behind the wheel . . . Counterweight-type windows—no cranks to turn.



EASY SERVICING

Usual every-day servicing is accomplished without raising cab . . . Engine is clean — requires no time-consuming, complicated service work on cluttered accessories . . . With cab locked in raised position mechanic can reach the complete engine from one position with no lost motion.

ADAPTABILITY

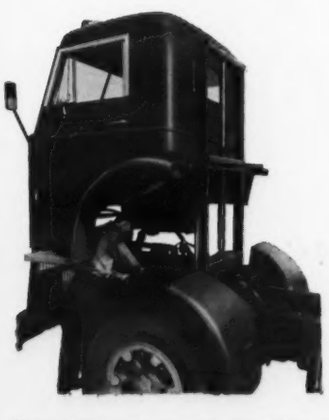
Four-wheel or six-wheel—platform or tractor type—Mack Cab-Forward "D" models are ideally suited for a wide range of services—city or rural delivery, over-the-road hauling, or construction fields. Mack makes more of its components than any other manufacturer. Therefore Mack is better able to produce vehicles of balanced design and controlled quality, perfectly adapted to meet specific job requirements.

LOW MAINTENANCE COSTS

...AND ECONOMY

...the same dependable components, performance-proved in other Macks . . . Chassis and scantling are conventional — no intricate levers and shifting mechanism . . . No surge tanks or complicated fan drives for cooling. Mack Cab-Forward "D" models are typically Mack in every respect—the quality truck providing unmatched operating economy.

CLEAN STYLING . . . PROVED ENGINEERING



Never before such complete accessibility in C.O.E. design. New Mack Verti-Lift cab provides full exposure of all engine and front chassis parts. It's like working at a bench with headroom and sideroom to spare.

You get both in Mack Cab-Forward "D" Series. They're truly modern—with eye-catching distinction. That's the first thing you notice about these sensational new units.

But—take a deep-down look at what's underneath. You'll find broad shoulders there—the rugged construction that for more than half a century has been the hallmark of hard-working Mack trucks.

You'll see smart engineering throughout.

The revolutionary new Verti-Lift "raise-type" cab—up and locked in seconds—exposing all engine and front chassis parts for quick and easy servicing.

Compact design—to give you shortest overall length or extra bulk capacity.

Picture-window cab that really puts the driver in the "driver's seat"—a C.O.E. cab that permits a driver to get in and out without contortions.

And—of great importance to you as an owner—in terms of low maintenance and low operating costs, there's nothing complicated about these great new trucks. No intricate levers or shifting mechanism—no troublesome surge tanks for cooling . . . A conventional chassis throughout . . . And an engine that's entirely free of cluttered accessories.

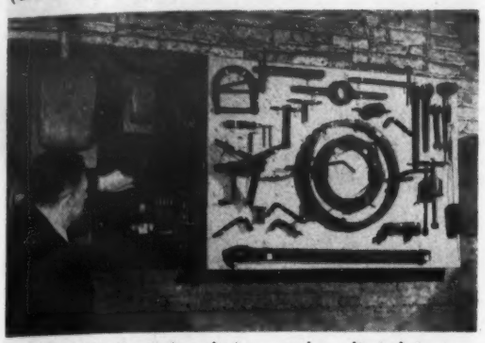
Yes—any way you look at them—and it will pay you to take a good look—you'll see trucks that mark a new concept in C.O.E. design—trucks that are the ultimate both in styling and in engineering. See them at your Mack branch or distributor.

MACK TRUCKS

EMPIRE STATE BUILDING, NEW YORK 1, N.Y.

IN CANADA: MACK TRUCKS OF CANADA, LTD. MONTREAL, TORONTO

(Continued from page 14)



This automatic timing device can be adjusted to a desludging sequence at any predetermined interval. At right is tool board for use on centrifuge

at a feed rate of from 800 to 1200 gal/hr. The solids in the effluent were found entirely acceptable for discharge into existing drainage facilities. All of the solids can be removed, but at a lower production capacity.

Depending on the end use of the product, the moisture content in the sludge will be quickly adjusted to suitable needs. The continuous centrifuge will produce sludge with as low as 65% moisture. The higher moisture ranges are simply adjusted by the shortening of time lapse between desludging operations.

Data on recovery savings

Dry feed products at high protein values can be recovered 24 hours a day, 7 days a week. At Sherwood Feed Mills, the actual recovery results in 20 desludgings/hr at 3½ gal each, with an 80% moisture content. That type sludge weighs 9.2 lb/gal, giving a total of 134.20 lbs of dry grain (20 x 3.5 x 9.2 x .20).

If a 7% moisture content is permissible, the saleable material recovered each hour of operation is in excess of 140 lb/hr, or 3446 lb/day. If this type recovery is carried out for 200 days a year only, the recovery revenue will be from 689,200 pounds, or 345 tons per year. Let's say that the average revenue per ton is $40.00. This means a revenue from the centrifuge operation of $13,800.00 per 200 day operation a year. If, on the other hand, the high protein material can be sold as a separate feed product, the revenue from the recovery operation will be even more profitable.

(Titan Model NS-70 self-desludging centrifuge is distributed in the US by Pitmar Corp., Dept. FP, 10 E. Fayette St., Baltimore 2, Md. . . . or for more information check FP 2304, pages 2 and 3.)

For more information on product at left, specify FP 2305 . . . see information request blank between pages 2 and 3.

Heavy fluids can't hinder working parts in these CRANE VALVES

THIS CASE HISTORY tells how the United States Playing Card Co., Cincinnati, solved—with Crane Diaphragm Valves—a costly problem of piping heavy enamels for paper coating.

The trouble was in the plug cocks and conventional gate valves formerly used in the enamel lines. During normal shutdowns the heavy liquid would build up on seating surfaces, in stem threads and working parts. The cocks and gates would "freeze up" . . . were hard to operate . . . couldn't be shut tight. The condition hampered production . . . made floors messy and dangerous . . . pushed maintenance costs sky-high.

Replacing with Crane Packless Diaphragm Valves stopped the trouble completely. Their sealed-to-fluid bonnet and pliable neoprene disc insert did the trick. After more than 4 years, all 48 Crane valves installed—with no maintenance whatsoever—are still seating tight . . . still operating freely and smoothly.

CRANE PACKLESS DIAPHRAGM VALVES

Working parts are safely out of contact with line fluid. The diaphragm seals the bonnet—that's all it does, giving it longer life. The independent disc with pliable insert seats tightly on foreign particles or seat deposits . . . and controls fluid, even should diaphragm fail. See your Crane Catalog or Crane Representative for wide selection of body, bonnet, and trim materials in these valves for countless uses.

CRANE CO.

General Offices: 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

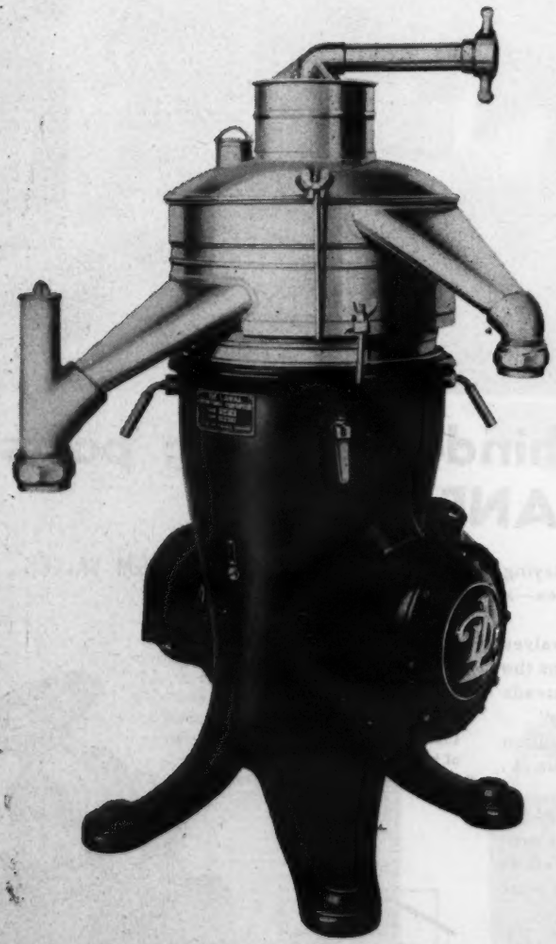
VALVES • FITTINGS • PIPE • KITCHENS • PLUMBING • HEATING

CRANE'S FIRST CENTURY . . . 1855-1955

When inquiring check FP 2306 on handy form, pgs. 2-3

TIME SAVING...

PLUS!



Naturally De Laval Centrifugals save time in chemical and food processing ...because they eliminate old-fashioned "stop-and-go" filters or settling tanks...provide new efficiency, economy and profit!

But that isn't all! De Laval Centrifugals also improve the chemical or food product being processed...by doing a better separating job!

If you do liquid-liquid, liquid-solid or liquid-solid-liquid separating...ask us to tell you exactly how De Laval Centrifugals save time—and money ...*and* do a better separating job ...for leading chemical and food producers!

DE LAVAL

for faster processing systems

THE DE LAVAL SEPARATOR COMPANY Poughkeepsie, New York • 427 Randolph St., Chicago 6 • DE LAVAL PACIFIC CO. 61 Beale St., San Francisco 5

When inquiring check FP 2307 on handy form, pgs. 2-3

Adding less than 25 ppm of antifoam to Fudgsicle mix eliminates foaming

Minimizes foaming problem in freezing Fudgsicle mix

McDonald Creamery in Detroit encountered a problem in transferring their Fudgsicle mix from 600-gallon mixing tanks to the molding line. While in transit, foaming occurred, so that the frozen bars often contained frozen foam to an undesirable extent. Problem was solved by adding silicone antifoam material in emulsion form to the mix. Only 3 oz were needed per 600-gallon batch. Foaming was reduced drastically or entirely eliminated.

(Antifoam AF Emulsion is manufactured by Dow Corning Corp., Dept. FP, Midland, Michigan . . . or for more information check FP 2308 on handy form, pages 2 and 3.)

Maintenance almost nil at Ruppert Brewery as . . .

fewer moving parts make flow meters more dependable

Problem: Flow meters which are installed on beer lines are basis for government alcohol tax; therefore must be frequently checked for accuracy. Naturally, it is desirable that these meters have long-term dependability. However, the Jacob Ruppert Brewery in New York had to send some of their meters to the repair shop every two months.

Solution: Ruppert switched to a simpler meter construction — only eight moving parts are re-

quired on their newly-installed meters. Accuracy is assured by use of positive piston displacement. Pistons are equipped with expanding carbon rings, eliminating metal-to-metal contact — beer acts as seal and lubricant. Design permits easy cleaning — entire meter is flushed out by forcing cleaning solution into discharge side of meter.

Results: Fifteen of these meters have been operating 24 hours a day, seven days a week for four years. Only four have needed maintenance jobs.

(Beer flow meters are manufactured by Rockwell Mfg. Co., Dept. FP, 400 N. Lexington Ave., Pittsburgh 8, Pa. . . . or for more information about manufacturer's product, reader may simply check FP 2311 on the convenient Reader Service slip which is located between pages 2 and 3.)

Empty field boxes handled best using 2-wheel hand trucks

Government research report gives results of study to determine best way to handle empty apple boxes at storage houses. Three methods were studied: manual, using hand trucks, and using fork lift trucks. Workers found labor and equipment costs for manual method to be $3.44 per 1000 boxes, for 2-wheel hand trucks, $1.35, for fork lift trucks, $2.24.

Studies were made of individual movements: from storage to road trucks, from storage to packing line, from dumping area to storage, from dumping area to box-house storage. Combinations of the methods were also studied.

Marketing Research Report No. 71 (36 pages) is issued by the USDA, can be obtained by remitting 30c direct to the Superintendent of Documents, United States Government Printing Office, Washington 25, D.C.

REAL FRUIT FLAVORS WITH THE FUGITIVE AROMAS CAPTURED

• RASPBERRY
• STRAWBERRY
• CHERRY • GRAPE

• FLAVOREX *real* fruit flavors are constantly gaining wider use in the manufacture of fine foods. These "real" fruit flavors may be used straight or with imitations to achieve extra deliciousness, richness, and character for your product.

Our "Low-Temp" process coaxes out and captures the very last drop of goodness in the fruit. Even delicately elusive, but important volatiles are collected and entrapped.

Write for full information and samples. Consult us on flavoring problems.

Also available: Complete line of highly concentrated imitation flavors for all uses.

FLAVOREX CO. INC.
MAKERS OF FINE FRUIT JUICE FLAVORS
302 S CENTRAL AVE BALTIMORE 2, MD

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Wise Canners and Packers *Use*
SLIPICONE
on all food processing equipment

Prevents build-up on cooking coils and kettles.
Assures uniform cooking.
Reduces down-time and maintenance costs.

For faster, more efficient food processing use SLIPICONE, the heat stable Dow Corning Silicone Release Agent.

DOW CORNING SILICONES
Order from your packaging supply house, or write DOW CORNING CORPORATION, MIDLAND, MICHIGAN

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powdered CARAMEL COLORING

A pure burnt sugar product that has been perfectly stabilized; it is instantly water soluble and keeps indefinitely.

This extra strong, superbly concentrated basic powder offers added coloring value to the dehydrated food industry.

The natural standard color for dry food products ranging in shade from light to dark brown. Recommended for use in—

✓ Soft Drink Powders ✓ Instant Coffee Base
✓ Prepared Cake Mixes ✓ Powdered Desserts
✓ Gravy Seasonings ✓ Dehydrated Soups

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Backed by our Seventy-Five Years of Experience and Service
SETHNESS PRODUCTS COMPANY
1300 Division St. Chicago 22, Illinois
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When inquiring check FP 2312 on handy form, pgs. 2-3

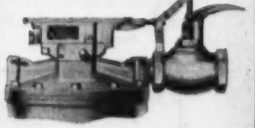
Automated
liquid handling depends on meters

SPECIFY THE INDUSTRY-PROVED BOWSER

XACTO
Widest selection of models for every plant...

Choose from the world's leading, most widely used line. XACTO meters are easily adapted with choice of dials and controls for changing needs to speed liquid handling operations and provide accurate accounting.

Recording printer mounts on meter. Prints quantity dispensed or received.



Delivers predetermined quantities up to 10,000 gallons, then shuts off.

A repeating control for delivery of predetermined quantities. Automatic. With or less recording printer.

GET ALL THE DATA YOU NEED NOW ...WRITE...

BOWSER ESTABLISHED 1885
BOWSER, INC., FORT WAYNE, IND.
1304 E. CREIGHTON AVE.

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if it contains MILK it could be our baby

If your product contains milk solids, or is used with milk, SeaKem "Colloids Out of the Sea"* may be able to *improve body and texture, make more desirable gels, suspend component ingredients more effectively.* The stabilizing advantages of SeaKem Colloids have been clearly demonstrated in a wide variety of such products, including chocolate milk, milk base pie fillings, milk puddings, milk shake mixes, syrups and frostings.

For instance, application in milk puddings and pie fillings goes all the way from the use of a straight SeaKem Irish Moss extractive without eggs to produce a light bodied custard or blanc mange, to combinations with cornstarch, with tapioca starch, or with blends of starches. When used as a starch modifier, benefits are as follows:

1. Pudding or filling is lower in viscosity during cooking. Thus heat transfer is better and scorching over direct heat is minimized.
2. The "set" comes in part from the SeaKem Colloid. Gel forms only on cooling. Boiling temperatures, as required for starch, are not necessary to activate the Irish Moss extractive. Yet if the milk is boiled, there is no injury. Thus the housewife or baker obtains a pudding or pie filling more uniform in texture, even when overcooked or undercooked.
3. Setting time is fast, cutting length of period from preparation to serving.
4. Puddings may be unmolded easily for formal service, or for ease of serving from large batches. Pie servings are made "non-runny."
5. Common and objectionable surface skin is greatly reduced. Marked improvement in this respect is especially noticeable in chocolate flavors.
6. Unsurpassed texture and eating quality is achieved. No tendency towards pastiness and no starchy flavor. End product spoons well.

*SeaKem is the registered trademark for the standardized hydrocolloids obtained from Irish Moss by the Seaplant Chemical Corporation. Extracted and refined by rigidly controlled processes which insure dependable uniformity and purity, SeaKem Colloids are light amber to colorless, free-flowing flaky powders. Available in a variety of types suitable for a wide range of stabilizing functions, SeaKem Irish Moss extractives have won acceptance with leading food manufacturers on the basis of their unique contributions.

For more information about how SeaKem Colloids can contribute to the improvement of products containing milk solids, or which are used with milk, write Dept. FP.

Serving Industry with "Colloids Out of the Sea"

Seaplant CHEMICAL CORPORATION

63 David Street, New Bedford, Mass.

When inquiring check FP 2314 on handy form, pgs. 2-3

Our thinking regarding action of monosodium glutamate is being revolutionized by research. Here is a report pointing how in frozen foods

monosodium glutamate guards flavor quality

GERALD A. FITZGERALD, Director
Donald K. Tressler and Associates
Westport, Conn.
as reported by **FP staff**

Earlier, monosodium glutamate was looked upon as a flavor additive much as one adds spices and other condiments. Now it is regarded solely as a flavor component of natural foods which is easily lost during processing and cooking and must be added to bring back the food to its original flavor. Actually, it has so little flavor in itself, that it is exceedingly difficult to understand how it can make such a remarkable improvement of flavor at times. Therefore, to understand it, one must stop thinking of it as a flavoring material but consider it only as something that is basically important to the natural flavor of foods.

Important facts about it can be summarized as follows:

1. It is a component of all protein foods, of all vegetables, and plays a major role in their natural flavors.

2. It is water soluble and can be leached out of a food during preparation and cooking much in the same manner as vitamins and minerals are lost from natural foods.

3. It is heat labile and its loss or conversion by extreme exposure at high temperatures or for long periods causes the food itself to lose palatability.

4. Its loss from food can be directly correlated with loss of palatability.

5. In spite of its apparent tremendous role in flavor, the normal level of monosodium glutamate is relatively low percentagewise compared with other components of food.

6. A level of 0.15 to 0.25% is necessary in order to maintain the natural flavor of most foods; when the level is reduced to 0.05%, the natural flavor of a given food may disappear.

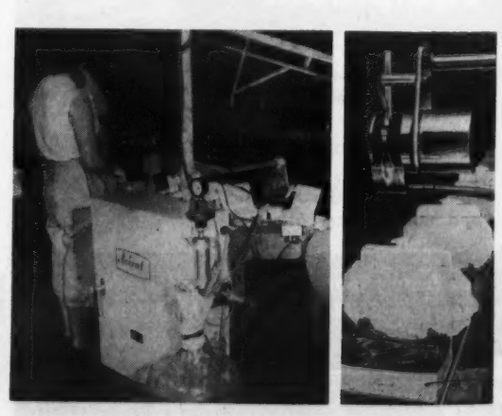
7. The replacement of monosodium glutamate in such a food in the amount lost will restore the natural flavor in an almost miraculous degree.

8. The addition of monosodium glutamate in excess of the given amount does not contribute additional flavor but does not impair flavor under ordinary circumstances.

9. It may accent sugar and salt and pleasantly round out the natural flavor, yet it may even sup-

Adding Monosodium Glutamate in Frozen Vegetables

Vegetable	Amount % by weight	Vegetable	Amount % by weight
Asparagus	0.20	Corn, Whole Grain	0.20
Beans, Green	0.15	Lima Beans, Baby	0.15
Beans, Wax	0.15	Lima Beans, Fordhook	0.15
Broccoli	0.15	Mixed Vegetables	0.15
Brussels Sprouts	0.15	Mushrooms	0.20
Carrots	0.25	Peas	0.25
Cauliflower	0.15	Potatoes	0.10
Corn, Cream	0.15	Spinach	0.20



Increased use of MSG has led to automatic dispensing equipment, such as unit shown above for frozen food products (close-up seen at right)

press certain undesirable flavors such as the sharpness of certain types of onions and the earthiness of potatoes.

It is only recently that we became aware of the fact that the "freshness" of vegetables is largely due to the presence of monosodium glutamate. Of greater importance is the knowledge that the cause of the rapid loss of flavor of wilted fresh vegetables and warmed-over or cooked vegetables held on a steam table, is the loss of monosodium glutamate. Whether or not this loss is caused by oxidation as is true of vitamin C, we know that the loss of monosodium glutamate, vitamin C, and flavor occurs in parallel. It has been suggested that added monosodium glutamate plays the role of an antioxidant.

To test the effectiveness of monosodium glutamate as an aid in maintaining freshness of frozen vegetables, monosodium glutamate was added to asparagus, peas, sweet corn, Henderson bush lima beans, Fordhook lima beans, succotash, French cut green beans, cut green beans, cut wax beans, leaf spinach, chopped spinach, cauliflower, broccoli, Brussels sprouts, and Boston marrow squash. All samples were prepared, packaged, frozen, stored, and cooked by standard procedures. They were drained and given to the taste panel immediately without seasoning although salt had been added to the cooking water (½ teaspoon in one half cup of water). The squash was reheated without adding water in a double boiler, so the salt had to be added and mixed before serving.

The remarkable result of the above tests is that the flavor of the sample containing monosodium glutamate in each instance was preferred unanimously by all testers in preference to the control sample, which was identical except that it contained no monosodium glutamate. The testers even found the monosodium glutamate treated samples to be superior in color to the untreated ones. The ten months of storage at 0°F produced a significant loss of color in the untreated green vegetables which was not noticed in those treated with monosodium glutamate. Unfortunately, no ascorbic acid determinations were made. Many people have interpreted the retention of color as a possible antioxidant effect of monosodium glutamate. If so, the ascorbic acid should have also been conserved. This will be checked in experiments now being planned.

(MSG used in these studies was Accent brand of Amino Prod. Div., International Minerals & Chem. Corp., Dept. FP, 20 Wacker Dr., Chicago 6, Ill. . . . or for more information check FP 2315, pgs 2 & 3.)

(Full description of Flocron dispenser for applying concentrated solutions of MSG and other food additives directly into individual containers is available from Magnuson Engineers, Dept. FP, 509 Emory St., San Jose 10, Calif. . . . or check FP 2316.)

TIME-TESTED FLAVORS for PICKLE PACKERS.....

You can now bring the fine art of pickle flavoring right into your own processing plant without resort to costly trial-and-error experimentation. How? By following a few simple suggestions and using the time-proven products of our laboratories—spicing specialties like those briefly described herewith. Into these fine materials have gone countless man-hours of painstaking scientific research, the results of which will enable you to produce a line of goods you'll be proud to label as your own. Write for test samples and working details concerning any of these products; also for FREE Flavor Data Sheets giving helpful information and suggestions for using our many dependable Pickle Spicing Compounds.

OIL DILL WEED—This outstanding specialty of our house has been used extensively by discriminating pickle packers for many years. It develops a well balanced, super-fine dill flavor.

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When inquiring check FP 2317 on handy form, pgs. 2-3

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When inquiring check FP 2318 on handy form, pgs. 2-3

Flavors for pet, animal foods

increase acceptability of balanced diet, aiding fast growth of new industry

RESEARCH LABORATORIES
Dodge & Olcott, Inc.
as reported by **FP staff**

Today, the average household pet is eating foods that for tastiness and nutritive value match, and in some cases, even surpass the victuals consumed by his owner. In 1953, sales in the dog food field alone totaled $200,000,000 — a figure double the volume of 1947. A recent study by the American Can Company showed there were 49,300,000 cats and dogs living with about 28,000,000 of America's 41,000,000 families. To help satiate their appetites, it is estimated that 1954 sales probably reached the 2,000,000,000 pounds mark.

This unusual growth is attributed to two basic factors: the rising dog population and the changing eating habits of the American family. Smaller family units and increased emphasis upon prepared, waste-free foods at the average table have brought about a situation of "no scraps for the household pets". Today about 75% of all dog owners and about 58% of cat owners purchase prepared pet foods — a high percentage although far from a saturated market.

The eating habits and psychology of dogs and cats are much the same as those of children. They eat the things they like and leave the things that do not appeal to nose and palate. In recent experiments at the Swift Nutritional Research Kennels in Chicago it was discovered that when offered fresh meat, cereal, cod liver oil, minerals, vitamins, and bone meal, for instance, a dog may select only the meat and thereby destroy his health, even though eating the other ingredients would give him a reasonably balanced diet.

Color unimportant for dogs

It is here that the flavor chemists of the nation's flavor and raw material supply houses have entered the picture. While it is easily possible, with the numerous and varied types of animal feed supplements available today, to formulate a pet food that is completely balanced in all nutritional factors, such a product is completely useless if it is not palatable and appealing to the animal. Experiments and long periods of observation have proven that animals are influenced by several factors in their choice of food — odor, flavor, texture, and color. Degrees, of course, vary in individual instances.

Even the dog, who is phesumably color blind or nearly so (there is some conflicting research on this subject, although it is fairly well established today that dogs distinguish shades but not colors) has been tested at the Swift kennels for any color partiality. Odorless colors were added to the food under testing and the usual precautions taken to ensure fair results — position of food dishes alternated, observations made from a distance, etc. Generally speaking, color seemed to play a very minor role in a dog's preference — so long as there was no change in taste or odor.

With dog food, the latter consideration is of particular importance. Since odor and flavor are very closely connected, and the dog's sense of smell is his keenest possession, strongly flavored ingredients, used in small amounts, have been found suitable for this purpose. Such products as cumin, garlic, and onion have proved very acceptable in a number of dog food preparations, although each product requires individual development.

Human factor enters

Still another element to be considered when flavoring feed for household pets is the human factor. A prepared food for cats or dogs must not only be nutritional and appetizing to the animal but acceptable in odor and appearance to the animal's owner as well, e. g. it must smell like meat.

To further insure the nutritional as well as palatable value of commercially prepared dog foods, the US Department of Agriculture now grants a seal of inspection to manufacturers who submit their ingredients for testing in order to maintain high standards. USDA also runs three-month feeding tests with adult dogs to guarantee the quality of the food. The inspectors check plant and equipment cleanliness, food quality and content, container processing, and accuracy of labels. This check protects dogs from foods that are mere belly-fillers without enough nutrients to keep them healthy.

Taste-enhanced animal feeds

Another area of recent interest to the flavor chemist is the growing market for flavored or taste-enhanced animal feeds. Cattle, sheep, swine, and poultry — all become profitmakers better and faster when they can be quickly and scientifically fattened for market.

Considerable research has been carried on in recent years by a number of large organizations as to both nutritive content and flavor-odor-texture appeal of various types of feeds for meat animals. Among the new sources now being examined for use in animal feeds are such items as seaweed, waste lettuce, cotton gin trash, even edible corncobs, as well as the traditional products vastly improved by various pharmaceutical additions.

(Continued on next page)

IT WAS ONLY NATURAL

(sugar beets being a primary source of MSG)

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— AND IT IS ONLY NATURAL

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When inquiring check FP 2319 on handy form, pgs. 2-3

HOWARD P. MILLEVILLE
Editor

B.S., Chemical Engineering, Illinois Institute of Technology. Graduate study and research, Massachusetts Institute of Technology. With U.S.D.A., he developed volatile flavor recovery process for fruit products. Also consultant to food industry.

RUSSELL L. PUTMAN
Publisher

VIRGIL WODICKA
Technical Editor

B.S., Chemical Engineering and M.S., Physical Chemistry, Washington University. Research Chemist and Manager of Cereal Labs., Ralston-Purina. Head, Nutrition Research, Libby, McNeill & Libby. Chief, Animal Products Div., Quartermaster Food & Container Institute.

JOSEPH L. WHITE
Associate Editor

Has spent 12 of his more than 21 years as an industrial editor with Putman Publishing Company. Previously edited publications in the paint, construction and lubrication fields.

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KARL ROBE
Associate Editor

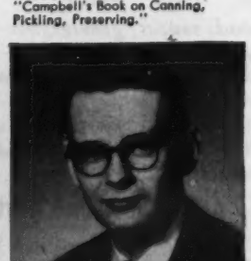
B.S., Food Technology, Oregon State College. Two years in Customer Service, Research Dept., American Can Company, San Francisco and Los Angeles.

ERNEST W. NORDLINGER
Assistant Editor

B.S., Horticulture, Purdue University. Research Assistant, Indiana Agricultural Experiment Station. Associate Editor, "Food Packer." Editor, Isker-Maclinn revision, "Campbell's Book on Canning, Pickling, Preserving."

KARL KLOMPARENS
Assistant Editor

B.S., Chemistry, Hope College. M.S., Food Technology, Michigan State. Two years with Swift & Company at their dairy plant in Holland, Mich. Instructor in Food Technology, New York State University.



WALTER KAISER
Assistant Editor

B.S., Food Engineering, Illinois Institute of Technology. Pilot plant work and engineering design, Army Chemical Corps. Research assistant, Wander Company.

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Publishers of
FOOD PROCESSING
CHEMICAL PROCESSING
FOOD BUSINESS

"Executive Magazines For Industry"

food ingredients

(Continued from preceding page)

Here, as in the case of pet foods, the problem of flavor enhancement is twofold — first to draw the animal to the feed, and second, to induce him to eat more than he otherwise would. Color, too, has been found to be an important factor, with livestock and poultry showing preference for a green color and a "sweet" flavor, while rabbits and sheep favor a nut type flavor and orange color.

For many years molasses and anise oil have been used as flavors for animal feed. Today, however, neither of these will suffice, because most of the feed supplements have an inherent bitter taste and obnoxious odor, and the flavoring material added must mask the odor and cover the bitter taste as well as impart the flavor desired.

A special line of flavors has also been developed for baby pig starter feed, with sufficient appeal to wean the piglet away from the sow to solid foods.

In the Dodge & Olcott, Inc. Dry Soluble Seasonings Laboratory a complete series of animal feed flavors have been developed called "Bovinol Dry Soluble and Bovinol Liquid for Spray" flavors. Based on long term experiments to determine animal taste preferences the new flavor group has been proved of definite value in dried molasses, bone meal, high protein, tankage, meal, or other base cattle feeds. The carrier is dextrose.

Manufactured in two distinct forms, the new products are available on both a dextrose base and as an emulsion for use as a dry or liquid flavoring. The liquid is approximately six times as concentrated as the dry soluble and is to be used in spray operations. The dry soluble is recommended for use at 1½ lb/ton of feed.

(More information on baby pig starter feed flavoring and "Bovinol" flavors can be obtained from Dodge & Olcott, Inc., Dept. FP, 180 Varick St., New York 14, New York . . . or for more information check FP 2320 on handy form, pages 2 and 3.)

Gives step-by-step method for breading chicken

Two-page mimeographed bulletin gives formulas for breading chicken before freezing, and describes actual procedure to be followed when experimenting with this product on lab scale. Since breaded chicken is packed both raw and fried, the bulletin covers both. Gives step-by-step instructions for the breading operation.

"Formula for Breading Chicken for Freezing" can be obtained from Modern Maid Food Products, Inc., Dept. FP, 110-20 Dunkirk St., Jamaica 12, N.Y. When inquiring specify FP 2321 on handy form, pages 2 and 3.

Stretching chocolate flavor

Helped by use of imitation aroma, but reformulation required to achieve good flavor duplication

JAMES J. BRODERICK, Flavor Chemist
Givaudan Flavors, Incorporated
as reported by **FP staff**

The difficulty in reproducing the flavor of cocoa is somewhat analogous to that of black pepper. Flavor chemists have synthetically reconstituted the essential oil of black pepper but as a flavor it lacks the "bite" so necessary to get the true flavor of pepper — so it is with cocoa.

Reproducing the aromatic portion of the cocoa flavor is not enough but is about as far as the flavor chemist can go with a highly concentrated imitation flavoring. The bitterness, fattiness, and saltiness of certain types of cocoa and chocolate products form an irreplaceable part of the total flavor that cannot be supplied by concentrated flavorings. It is for this reason that most imitation cocoas or chocolate flavors have been termed stretchers or extenders. The presence of some cocoa or chocolate is usually necessary to supply that portion of the total flavor that cannot be incorporated in the concentrated imitation flavoring.

Fortunately the food technologist of today realizes that he simply cannot remove 25 lb of cocoa from his formulation, replace it with 1 oz of flavor, and expect to get the same flavor and physical properties. He does realize that with a reformulation surprisingly good results are obtained, especially in those products where cocoa or chocolate simply supplements the basic flavor of the product. Reformulation begins with replacement of the chocolate or cocoa products flavorwise, with a combination of synthetic chocolate flavoring materials and heavy bodied cocoas. Other materials that replace bulk or give part of the flavor or physical properties of the replaced materials are also made part of the formulation. The synthetic flavoring materials replace the aromatic portion of the flavor of cocoa found in the cocoa butter or in that portion of the cocoa products removed. Heavy bodied cocoas that account for approximately 50% of the total flavor are added to contribute the necessary flavor body and bitterness. Cocoa hulls or other cocoa by-products are sometimes used to supply part of this bitterness and body.

Further additions now depend on the character of the end product. For coatings or hi-fat icings and fillings a vegetable oil must be selected to replace the cocoa fat normally present. Butter oil and coconut oil are high on the list but a combination of the two or a blend with the more economical vegetable oils (possibly hydrogenated) may be

(Continued on next page)

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A. E. Staley Manufacturing Company, Decatur, Illinois

When inquiring check FP 2322 on handy form, pgs. 2-3

(Continued from preceding page)

desirable. Several vegetable oil manufacturers have perfected hard fats of varying properties and melting points that have ideal properties for coatings and similar products. With the use of emulsifiers, superior physical properties may even be obtained. The food technologist finds the service laboratories of the vegetable oil and emulsifier suppliers very helpful in this connection.

In formulations where a low fat cocoa is a source of cocoa flavor the bulk of the cocoa replacement may be roasted cottonseed hulls, for example, which can be obtained in a variety of shades from a light natural cocoa shade to the color of a heavy Dutch processed cocoa.

Soya flour or milk powders with their natural oil content may also be helpful and if the resulting color is inadequate, a variety of cocoa shades are available from the primary color producers.

The food technologist will probably find that he now has a product of satisfactory physical appearance and properties but that flavor-wise some adjustments are still necessary. The adjuncts normally added to cocoa may be desirable such as vanillin, natural vanilla, St. John's Bread, cinnamon, almond, malt, etc. The flavor supplier can offer valuable suggestions at this stage. If sufficient bitterness is not obtained from cocoa or its by-products then coffee or cinchona bark, available in powdered, extract, and oleoresin form, are helpful. More intense bitterness from ingredients such as gentian may be necessary in some cases.

Following this procedure, many food technologists have been pleasantly surprised with their end results. They have been aided in their efforts by recent improvements in basic cocoa and chocolate flavors by chemists from a number of the basic flavor organizations.

A study of the constituents of the essential oil of cocoa and vanilla beans coupled with an analysis of the end products of cocoa fermentation and roasting have aided the Givaudan staff in creating an Imitation Chocolate Arome of high concentration. Soluble in vegetable oils, ethyl alcohol, and propylene glycol, it is used at the rate of 3/8 oz/100 lb coating or, in general, 1/2 oz replaces 25 lb of cocoa nibs.

(The Imitation Chocolate Arome described is a development of Givaudan Flavors, Inc., Dept. FP, 330 W. 42nd St., New York 36, N.Y. . . . or for more information reader may simply check FP 2324 on the convenient Reader Service slip located between pages 2 and 3.)

NEXT MONTH —

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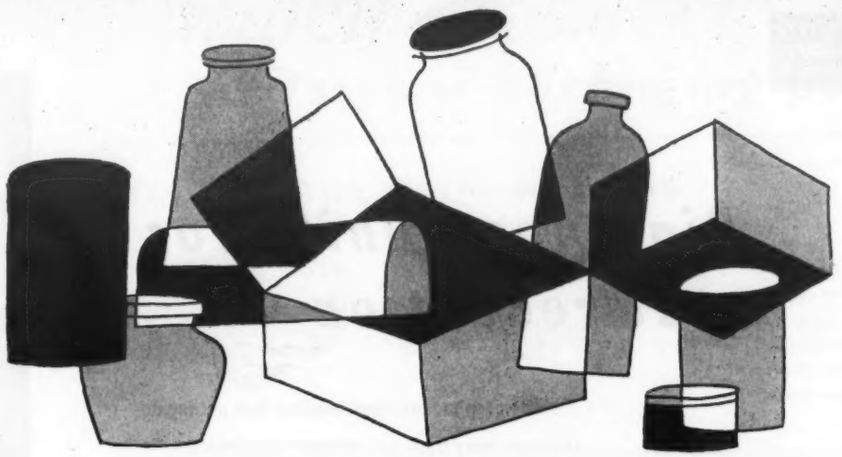
When inquiring check FP 2323 on handy form, pgs. 2-3



This month ***FOOD PROCESSING*** *features its regular section on*

PACKAGING

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packaging section

Big opportunity for cost reduction

. . . when top management realizes that packaging embraces more than just package appearance

by DR. L. V. BURTON

Dr. L. V. Burton who retired last month as Executive Director of Packaging Institute, Inc. continues as part time consultant in charge of editorial activities. During his term in office the Packaging Institute has tripled in size, and its Technical Committees have increased from one to the present twenty-six. Dr. Burton's retirement plans include the writing of several books and consulting work in the fields of food technology and packaging — particularly in the management aspects of packaging. He will continue to make his permanent home in Scarsdale, N. Y. but can best be reached through Packaging Institute, 342 Madison Ave., New York 17, New York.

Dr. Burton was trained as a chemical engineer and received his Bachelor's degree from University of Illinois in 1911 and his Master's degree in Biochemistry in 1914. The next several years were divided between work with canners in research and production capacities and further study. Dr. Burton received his PhD in Bacteriology from Yale in 1917.

Then came World War I, and service with the Food and Nutrition Section of the Sanitary Corps. Return to civilian life found him in charge of Illinois Inspection District of National Canners Association for several years. Later, he was Assistant to the General Superintendent, Libby, McNeill & Libby; then plant manager, Foulds Milling Co. plant at Franklin, Ind.

For many years he was editor of Food Industries, a post which he left in 1947 to become Executive Director of the Packaging Institute.

A past president of the Institute of Food Technologists, Dr. Burton is also a member of the Industrial Advisory Committee, Nutritional Foundation, and has served on Advisory Board, Military Planning Division, Subsistence and Packaging, Office of Quartermaster General, as well as many other technical and professional groups.

In the food industry, packaging is our principal business, measured by the number of people directly engaged in production. More than half of all direct labor hours in food manufacture are in packaging production. Packaging is so large an item of production costs that it is no place for hobbies or unbalanced thinking.

It should never be forgotten that Packaging is our principal business. To realize this fact, all one needs to do is walk through the average food plant and note what the employes are doing. Unhappily, however, people seldom see the obvious except when it is pointed out to them.

It was gratifying to learn from one Industrial Engineer in a food company, at the recent California Conference on Industrial Engineering, that he had independently discovered that in his employer's plant it requires the work of five persons to package the product made by one person! But it was disheartening to learn from him that his top management was lukewarm to the fact that, if the ratio of five to one could be reduced to four to one, an important price reduction could be achieved. This—in an organization that is noted for its use of low prices as an effective sales weapon.

Management's too frequently limited concept of all that packaging embraces, its failure to be aware of the whole series of techniques for solving packaging problems, is a costly limit on its business success. This limited vision prevails in too many organizations. The absence of a comprehension of all that Packaging entails is reminiscent of the story of the Three Blind Men in Aesop's Fables. You will recall that each of the sightless men had felt a different part of an elephant and then they argued among themselves about what an elephant was like. Seemingly they never realized that it was all elephant, though each had examined quite different parts of its anatomy.

A lamentable parallel exists between this ancient fable and top management thinking. Some day I hope to meet a corporation head who sees the whole picture and acts accordingly.

At the recent Conference on Industrial Engineering at the University of California, many specialists in the most advanced phases of the subject complained that Top Management somehow does not understand and accept the new techniques that have been available since World War II. Indeed, it was surprising to learn that the military, whose habitual attitude is to accept only the simple, the tried and true, had taken the initiative in developing the newer techniques of Industrial Engineering to aid in the complex problems of logistics and inventory control in a multifront world war.

Packaging, in the production and procurement sense, is one phase of Industrial Engineering, although packaging also has about sixteen other phases—most of which are not often recognized as packaging functions. The complaint at the California Conference about the reluctance to accept the newer techniques can be echoed in the reluctance or failure of management to realize that in the packaging function there is a great deal more than the purely psychological effect of the appearance of the package on the mind of the purchaser.

It is lamentable that many capable men in high positions seem to regard packaging as solely a sales tool—a surface treatment—designed to create a buying impulse in the mind of the beholder. Such buying impulses are much to be desired, but packaging as an industrial function covers far more than the mere selling effect of a properly designed package.

Lower selling prices also create buying impulses, especially prices that are lower than directly competitive items on the self-service store's shelf.

Convenience of the package, whether it be for easy opening, reclosure, or keeping fresh the unused portions, also creates buying impulses—especially for repeat sales.

One must never forget that the cost of the empty package is often nearly as large as the cost of

its contents. This fact should provide a stimulus for constant study of packages and new packaging methods, materials, and machines. For, in a competitive economy, there is always the possibility that the competitor may be able to sell his equivalent product at a lower price, solely because he has learned how to package it a little cheaper, yet do it effectively.

So many ways exist for utilizing the various aspects of packaging to benefit the company's competitive position that one wonders how it is possible to ignore them.

I recommend that the "Tops" take another look at their entire facilities for production and selling and see the manufacturing end of their businesses in terms of Production of Product and Packaging of Product. The important potential areas for cost reduction lie in the Packaging Function.

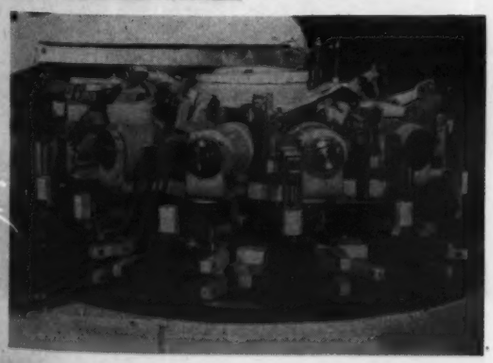
Applies pre-cut neck bands at speeds of 150 per minute

Hiram Walker installs first seven machines, which orient bottles, labels for tax stamps

At Hiram Walker & Sons, Inc., Peoria, Ill., the problem of applying pre-cut neck bands has been mechanized, with a total of seven spirits-bottling lines now equipped with automatic neck-banding machines. This is the first installation of

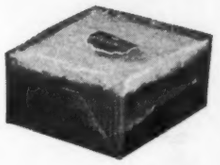
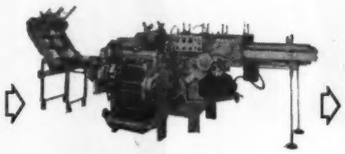
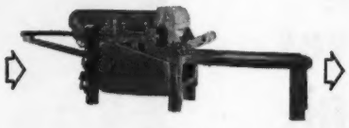
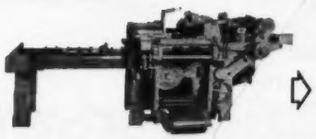
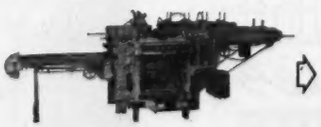
(*Continued on page* 35)

Here's battery of five of the seven automatic neck-banding machines at Hiram Walker's distillery



Bottle is aligned directly beneath the pre-cut seal, which is precisely positioned by the eight expanding fingers which hold seal

WHICH solution fits your packaging problem best?

	The PACKAGE	The MACHINE	The RESULTS
1		 MODEL 47B	Delicate iced cakes are wrapped in Cellophane at speeds of 40 to 70 per minute . . . yet each cake is handled so gently by the ***"Continuous Flow"*** process that each one comes out undamaged with a firm, attractive "show-case" wrap.
2		 MODEL 201	A skin-tight wrap that helps keep bacon from turning dark or rancid due to oxidation. Through new exclusive paper tension control, and a special method for "rolling out the air," a neater, more eye-appealing, better sealed package is obtained. Speeds up to 50 per minute are obtained with no sacrifice of wrapping efficiency.
3		 MODEL 43	A typical example of Battle Creek engineering for merchandising. Loose soda and graham crackers are wrapped in individual ¼ or ⅓ pound glassine or Cellophane packages at speeds of 60 to 85 per minute. Meal-size servings help eliminate the soggy crackers of yesteryear.
4		MODEL 51	Attractive packages perfectly sealed in wax coated paper at the rate of 160 packages per minute are routinely produced through the ***"Continuous Flow"*** process of Battle Creek packaging machines.
5		 MODEL 47B	These irregularly shaped products are wrapped at 50 to 70 packages per minute in Cellophane. Each item is carefully handled by the ***"Continuous Flow"*** process so that they stay undamaged and unsoiled. The sparkling Cellophane overwrap increases impulse purchases at the retail level.

BATTLE CREEK
packaging machines, inc.
400 MERRILL PARK
BATTLE CREEK, MICH.
Continuous Flow

Write for complete catalog to find the Battle Creek Machine that fits your wrapping or packaging needs.

When inquiring check FP 2325 on handy form, pgs. 2-3

SHADOGRAPH weighs More Accurately, Saves Time, Product, Profits

SHADOGRAPH'S shadow-edge indication is projected by a beam of light. Parallax readings are avoided — visible accuracy is increased over 300%. All friction in indicating mechanism is eliminated. Greater speed is achieved through reduction of lever movement and by the action of an adjustable damping device which brings scale to rest quickly.

Scale model shown is available in capacities from one to six pounds and sensitivities as low as 1/160th ounce. Other models up to 75 pound capacity for every food packaging or check-weighing operation. They have a corrosive-resistant finish to protect against moisture.

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Exact Weight Scales
Better quality control
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Send literature on SHADOGRAPH scales.

Name .....
Address .....
City ..... Zone ..... State .....

When inquiring check FP 2326 on handy form, pgs. 2-3

Here is filling unit at Swift's Springfield, Mo., plant. One can is filling while other is positioned under second spout

Simple accurate mechanism reduces maintenance,

increases versatility of liquids filler

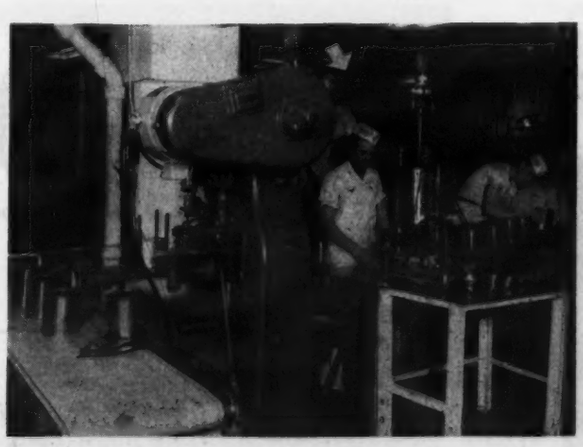
- Solves quick-installation, accuracy problem at Swift
- Meters corn oil for Republic Foods
- Fills whipped cream pressurized containers
- Makes small dairy conversion to fiber cartons practical

Engineering design often involves complicated mechanisms of great complexity, thus generating problems of high capital outlay and increased operating and maintenance expense. Illustrated at right is a diagram of a liquids filler which was designed to achieve the simplest possible construction in order to alleviate such problems.

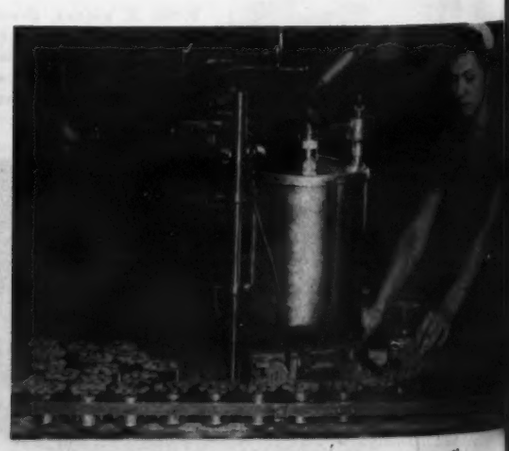
Filler consists essentially of a solenoid-operated rod which is attached to a ball-type valve. A float-valve level control and a small electronic timer complete the components.

Principle of the filler is simplicity itself: A liquid will flow through a given orifice (under constant head) at a specific rate per unit time. Constant head is obtained by a float-valve in the filler bowl. Constant time is controlled by an electronic timer, which can be located in any convenient area near the filler.

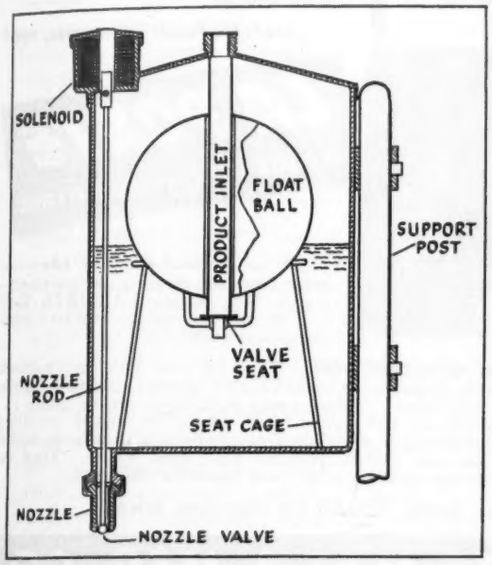
The filler has been used extensively in the dairy field, especially in models which allow smaller dairies to fill any type of fiber milk container



View of packing line at Swift. Electronic timer control (arrow) is located above filler operator out of way



Filler is used at Republic Foods to meter corn oil into cans of Vienna sausage



Cutaway diagram, showing inside of filler

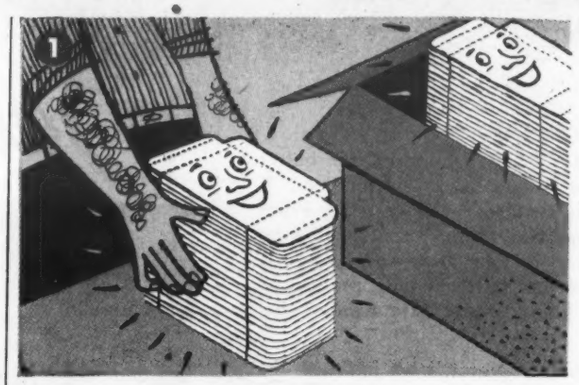
manually, semi- or fully-automatically. It is now finding use in other liquids-filling operations:

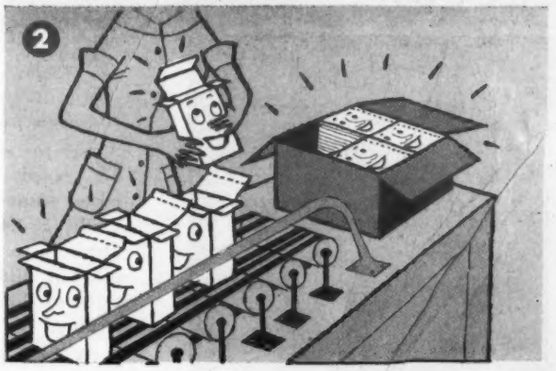
Butter oil at Swift

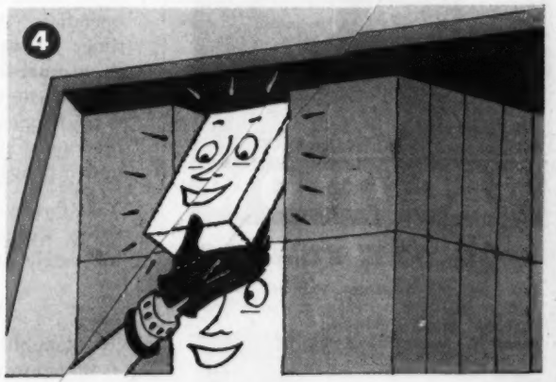
When Swift & Co. decided to enter the surplus butter program, in line with government efforts to alleviate the surplus, they contracted to pack butter oil at their Springfield, Mo. plant. Time elements of the contract necessitated getting started quickly — but difficulty developed in obtaining a suitable filler. Operating within two weeks of the order date, the simplified-design filler had close accuracy, was easy to disassemble for cleaning, and required little maintenance.

(*Continued on next page*)

Filler allows dairy to use fiber cartons where smaller plant volume makes larger machine impractical







Cartons look better...longer...
with A-C* Polyethylene

Everybody has a hand in handling . . . coating . . . shipping . . . setting up . . . filling . . . packaging . . . stocking . . . stacking . . . buying.

It all makes for pretty rough treatment . . . treatment that means wear . . . wear that means rejects, returns, losses.

You can safeguard your packages . . . with A-C POLYETHYLENE! You just add it to your regular coating wax for outer wraps and cartons. Adaptable to almost every type of carton or paper, A-C POLYETHYLENE gives your package a bright, long-lasting gloss.

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A-C POLYETHYLENE is a tough polymer that resists scuffing and abrasion. It provides a smooth surface that won't show signs of shelf life. Oily hands won't hurt either because of the high moisture and chemical resistance given by this improved coating.

And colors stay bright, "alive" with A-C POLYETHYLENE. You get increased brand identification, extended shelf life.

Best of all, A-C POLYETHYLENE gives you these advantages with the workability and ease of your regular carton-coating wax. In most cases, you can continue to coat at regular operating temperatures —under same conditions as wax.

There are decided sales advantages to using low-molecular-weight A-C POLYETHYLENE. Find out more about it. Write today or send in the handy coupon. Please use your business letterhead.

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Allied Chemical & Dye Corporation
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CITY_____ STATE_____

TYPE OF BUSINESS_____ FP-4

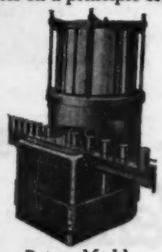
When inquiring check FP 2327 on handy form, pgs. 2-3

VACUFLOW

POWDER FILLERS

Cut Product Wastage. Vacuflow powder filling equipment operates on a principle of vacuum feeding, instead of pressure, to pack powder into a container.

Air is removed from the container to create a vacuum which draws a measured quantity of powder from the hopper. There is no problem with dust control, since the unique Vacuflow method simply does not involve air currents that cause dust.



Rotary Model

Model E

Semi-automatic models are available for filling containers ranging from the tiny talcum box up to and including 100 lb. paper bags and 200 lb. drums. Rotary models are available for automatic production of 5 lb. sizes or less at speed of 45 to 300 per minute.

Pneumatic is the one manufacturer in a position to furnish machines for making up complete production lines. Units are available for air cleaning, powder and liquid filling, capping and labeling a wide range of bottles, cans or jars.

PNEUMATIC SCALE CORP., LTD.
67 Newport Ave., Quincy 71, Mass.
Also: New York; Chicago; San Francisco; Dallas; Los Angeles; Seattle; Leeds, England
Canadian Division:
Delamere & Williams Company, Ltd., Toronto

PNEUMATIC

When inquiring check FP 2328 on handy form, pgs. 2-3

(Continued from preceding page)

As set up at Swift's Springfield plant, the butter oil, cooled in line with product specifications, is piped from supply tank to the filler bowl. Filler model at Swift has two filling nozzles, allowing operator to position or take away one can while other is filling. In this way, day-long production rates of 10 cans (No. 10 size) are handled per minute.

P. B. Arnold, Swift engineer who installed the filler, states that loss of product through the filler is so small as to be a negligible factor in the operation. A vernier control on the electronic timer allows close control of the time interval. A manual control button on the timer allows operator to fill the first can of a run, then top off if fill happens to be low. Machine is operated during run by pressing a knee-bar as can is positioned under proper spout nozzle.

Take-down of the filler for cleaning requires but a few seconds: The solenoid-valve rod is removed by merely lifting it, then bowl cover is lifted off.

Corn oil at Republic Foods

At Republic Foods, Chicago, corn oil at room temperature is metered into 208 x 306 size cans of Vienna sausage. Two-oz portions are added with high accuracy. Republic is now adapting use of the filler to handle 16 to 20 oz of oil into larger size packs. Operating speed on the ½-oz fill is 30 per minute; filling is semi-automatic.

Whipped cream in pressurized cans

Filling whipped cream in cans, then pressurizing with nitrous oxide is another adaptation for the basic design filler. Cans are filled with 6 to 7 oz of product, in 12-oz container. Can is then placed under a crimper, located on same table as filling unit. Can trips a microswitch which carries crimping operation through its cycle. Crimper is ready to operate when connected to a supply of compressed air. Air filter, oiler, and air and gas regulators come with the machine.

Filling, closing fiber milk cartons

As operated in dairies, where filler found an early application, a single machine allows smaller operators to adapt production to fill and close fiber containers, in order to meet competition of larger producers whose volume merits expensive high-speed equipment. On manual models, a simple hydraulically actuated closer unit is added to the basic filler-timer unit. As production requirements rise, a two-spout bowl can be substituted which will double capacity. Equipment for conversion to automatic operation can be added also.

Automatic units which handle up to 30 quart cartons per minute and 20 half-gallon cartons are built around basic filler-timer. A combination

Saves TIME MAINTENANCE LABOR

. . . protects foods in process, too!

LA PORTE
FLEXIBLE STEEL CONVEYOR BELTING

Right for all food handling jobs—canning, freezing, pickling, dehydrating—tough, long-lasting LA PORTE Belting speeds processing, requires minimum servicing!

STEEL MESH CONSTRUCTION rolls with the punches, protects against loading impacts. FLEXIBILITY gives La Porte a tighter grip on friction drum . . . does away with creep, weave, jump . . . gives you perfectly flat surface for containers empty or filled. *Open Mesh* allows air to circulate around products in process, makes cleaning easier and faster. Resists heat, cold, steam. Find out how La Porte can step up your food handling efficiency.

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LA PORTE MAT & MFG. CO.
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When inquiring check FP 2329 on handy form, pgs. 2-3

To get more information on products—use the Reader Service slip • *inside the front cover*

This inexpensive filler does your filling job!

SIMPLEX FILLER
TOP QUALITY MANUFACTURE

- Handles liquids and semi-solids!
- Fills 25 to 80 bottles, jars or cans per minute!
- Adjustable 2 oz. to gallon!
- Easily cleaned!

Model T

Write for circular on this fully automatic Model T (2 pistons) and other Simplex fillers.

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571-7th Street • San Francisco 3, Calif. • Phone KLondike 2-2020
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When inquiring check FP 2330 on handy form, pgs. 2-3

carton feed and conveyor system is added to handle the specific fiber carton — Canco, PurePak, or Sealright. If more than one carton type or size is run, conversion units are furnished which make the change-over a matter of two or three minutes. As one run is completed, disassembly of the feed stack by loosening four wing nuts takes but a few seconds. Adding the conversion feed assembly and adjusting the height of conveyor take the remainder of the time. Fillers will handle half-pints, pints, thirds, quarts, half-gallons.

Hydraulic power is used in the closing mechanisms to replace more complicated power transmission systems. Dairy models are essentially the same as the models used at Swift and Republic — with the addition of closing mechanisms for any of the fiber cartons now available, and, on the automatic models, the addition of feeding, positioning, and discharging equipment.

A big advantage of using hydraulic units is that power is applied directly at point of need in simplified, self-contained manner. Take-off gear trains, cams, reciprocating arms are eliminated. Repair or replacement is simple and inexpensive; action is easy to adjust to meet changing production conditions.

("Electromatic" fillers — covered by patent RE-23,830 — are manufactured by Mojonnier-Dawson Co., Dept. FP, 9151 Fullerton Ave., Franklin Park, Ill. . . . or for more information check FP 2331 on handy form, pages 2 and 3.)

Applies Neck Bands

(Continued from page 31)

this new machine, which will handle all conventional sizes and shapes of bottles at speeds of above 150 per minute.

Orienting units are installed on the Hiram Walker machines which align bottles and apply bands so that the tax stamp over the closure may be seen. Band-feed magazine holds 900 to 1000 bands. Only one operator is required per machine, which can be adjusted to handle bottles of different shape in as little as five minutes. Changeover to different size takes about 30 minutes.

(Gisholt Sealamatic neck-banding machine is manufactured by Gisholt Machine Co., Dept. FP, 1245 E. Washington St., Madison 10, Wis. . . . or for more information check FP 2332 on handy form, pages 2 and 3.)

NEXT MONTH —

Can-bundling can be costly when done manually—and poor appearance can spoil the sales impact. See how mechanical bundling solves the problem

"Another Product Safely Shipped in Inland 'protection-eered'* Containers"

SPECIAL LINING ON INLAND CONTAINERS PROVIDES CORN PRODUCTS REFINING COMPANY WITH EXTRA CHECK ON QUALITY

When corn syrup leaves Corn Products Refining Company's plant at Argo, Illinois, bound for thousands of food and industrial uses, it is as pure and uniform as the most scientific processing and exacting quality control measures can make it. Besides the many laboratory tests, mechanical and visual inspection is made wherever possible, including the final filling operation where the crystal clear liquid is poured into steel shipping containers.

To aid Corn Products Refining Company in this final, all-important inspection, Inland provides a special aluminum sanitary lining on the containers they supply. As the container is being filled, any discoloration or sedimentation can be quickly and easily detected, assuring Corn Products Refining Company that every shipment of their syrup is given the "all clear" signal before it leaves the plant.

Maybe an Inland Steel "protection-eered" container can help with your quality control problems. Why not talk to your Inland representative and see?

*the right container, with the right lining for your product.

INLAND

Write Mr. Robert Boecher, Room 241-E
INLAND STEEL CONTAINER COMPANY
Division of Inland Steel Company
6532 South Menard Avenue • Chicago 38, Illinois
Plants: Chicago • Jersey City • New Orleans

When inquiring check FP 2333 on handy form, pgs. 2-3

SIMPLE ARITHMETIC IN PACKING

When one large box does the work of several smaller ones . . . it adds up to savings in many directions. You pack your product faster, handle it more efficiently and store it in less space.

"King-size" Gaylord boxes are designed to hold as much as 2,000 pounds of such diverse products as bulk chemicals, metal parts, wax, and brake linings. The list is constantly growing. Your product could be next.

For information call your nearby Gaylord sales office or visit Gaylord Booth 805 at the National Packaging Exposition, Chicago, April 18-21.

Gaylord Boxes

CORRUGATED AND SOLID FIBRE BOXES
FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES
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GAYLORD CONTAINER CORPORATION • ST. LOUIS

SALES OFFICES FROM COAST TO COAST ★ CONSULT YOUR LOCAL PHONE BOOK

Stretchable paper can be made to hold proper amount of desiccant for each container size

the 'HOW' of in-package desiccation

- **Practical method lowers moisture to below 1% after regular drying, for higher quality, improved storage life**
- **Re-calcined lime successful even at the low humidities necessary — and expands least**
- **'Two-way stretch' heat-sealable paper allows moisture passage, desiccant expansion**

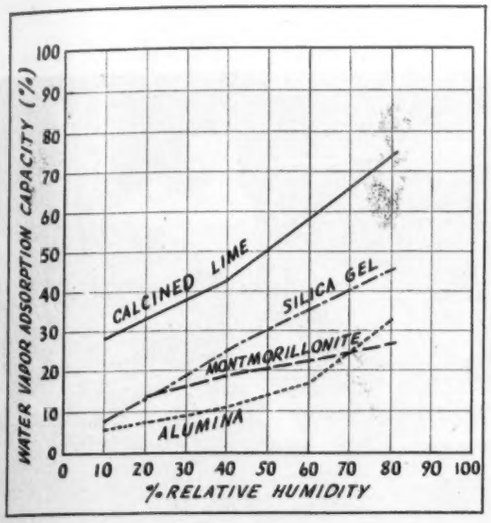
KARL ROBE
Associate Editor, Food Processing

Use of in-package desiccation in the new powdered fruit juice products of Orange Crystals Co., (see Food Industry News, March 1955) has revived interest in this method of attaining top quality in dehydrated products. Research by scientists in government laboratories has demonstrated that storage life of many dehydrated vegetables and fruits increases as their moisture content is lowered below those levels commonly attained by commercial drying methods.

However, this desirable low-moisture content (in a range below 1%) is easily obtained by packaging a suitable desiccant with the product. Moisture is thereby removed — without use of heat — from the product during storage. Practical considerations in applying in-package desiccation are reported here, with sources of research data and commercial supplies.

Choice of proper desiccant

Material chosen for in-package desiccation should exert a low vapor pressure when sealed with product. Desiccants such as silica-gel, alumina, and montmorillonite clay, acting by adsorption, and calcium sulfate and calcium chloride,



Comparative water vapor adsorption capacity of typical samples of desiccant material (Filtrol Corp. data, based on methods in Govt. spec. MIL-D-3464A)

reacting chemically, have been tried. These have lacked suitable capacity to remove moisture at the relatively low humidities encountered.

A practical desiccant must also have a low volume expansion as moisture is accumulated, for packaging space economy.

Various forms of calcium oxide have been developed which have fulfilled these requirements. Because of relatively high capacity for moisture, lower expansion rates, and its capacity to remove moisture even at very low humidities, this material has been developed for commercial use. Re-calcined lime has been found particularly successful for this application.

The amount of lime needed for satisfactory moisture removal in orange juice powders is around 10% of the weight of the product. This amount occupies between 10 and 15% of the container volume.

How to package the desiccant

As calcium oxide takes on water of hydration, it expands. Package must allow interchange of moisture from product, be sift-proof, and strong enough to withstand handling and shipping shocks. Three methods of packaging the dehydrated product are in use:

1. Jean-cloth bags have been selected by the QMC Subsistence Laboratory for specifications of in-can dehydration. Paper-coated cloth bags are also under consideration. The paper-cloth combinations produce a container which is non-stretchable, so it must be large enough to hold the completely

(*Continued on page 47*)

Just imagine soup concentrate in a packet that's soluble, odorless, tasteless, nontoxic.

Think of other package uses: Powdered soap or detergents, sugar, puddings and desserts, pharmaceuticals.

—or any product added to water in fixed amounts.

They're all possible with new edible films that are derived from Glycerine or using Glycerine as a plasticizer.

The unique balance of properties that won such wide acceptance for Glycerine in the past continues to open new doors to chemical progress. In paints, foods, pharmaceuticals, packaging . . . for tomorrow's surge of new specialties . . . in formulations and reactions yet unknown. Nothing takes the place of Glycerine.

This balanced group of properties keeps Glycerine's usefulness growing

HYGROSCOPICITY • STABILITY • HUMECTANT •
SOLVENT POWER • VISCOSITY • NONVOLATILITY • CARRIER • SOLVENT • LUBRICANT • SOFTENER •
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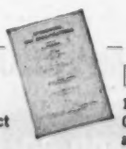
☐ 20-page booklet on Glycerine for product conditioning



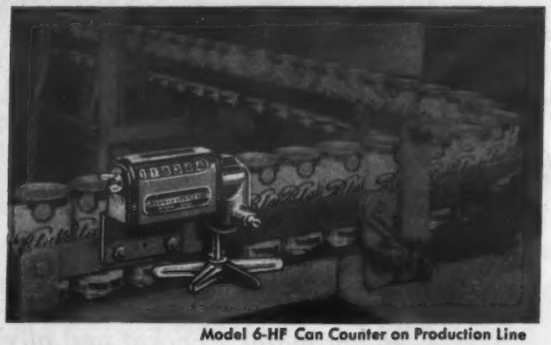
☐ 12-page booklet on Glycerine standards and specifications

☐ 16-page booklet on Glycerine properties and applications

☑ CHECK AND SEND FOR TECHNICAL DATA

For your free copy of any or all of these booklets write: GLYCERINE PRODUCERS' ASSOCIATION • 295 Madison Ave., New York 17, N. Y.

When inquiring check FP 2334 on handy form, pgs. 2-3



Model 6-HF Can Counter on Production Line

Turn Up HIDDEN PROFITS

Productimeters eliminate "profit-eating" losses . . . insure economical plant operation and maximum use of man hours . . . provide accurate production records for all departments.

Our Maintenance and Service Departments are at your disposal to insure continued operation of your present counters.

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151 S. Water St. Providence 3, R. I.
Representatives In Principal Cities

Send for Bulletin No. 51

PRODUCTIMETERS
SINCE 1879 *Count Everything*

When inquiring check FP 2335 on handy form, pgs. 2-3

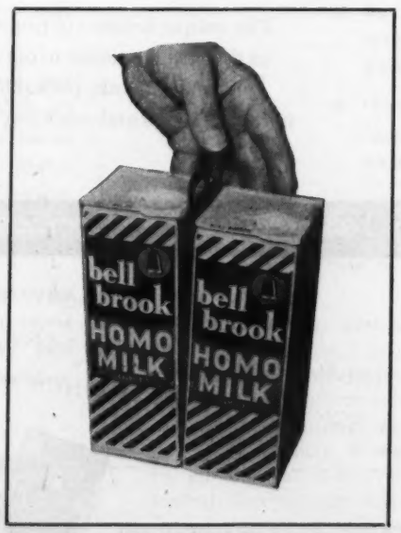
What's the problem in your case? Just tell us . . . or ask for our detailed literature.

THE CLEVELAND VIBRATOR CO.
2818 Clinton Ave. • Cleveland 13, Ohio

When inquiring check FP 2335A on handy form, pgs. 2-3

Banding two quarts together and adding handle, creates carry-home package; impulse sales boom production, making manual operation too slow, so . . .

twin-packaging goes automatic



Here's how handle locks — bottom of handle folds in two directions. Each side is then folded over again to form a shoulder which locks beneath the lip of each carton. Tape then bands cartons securely together

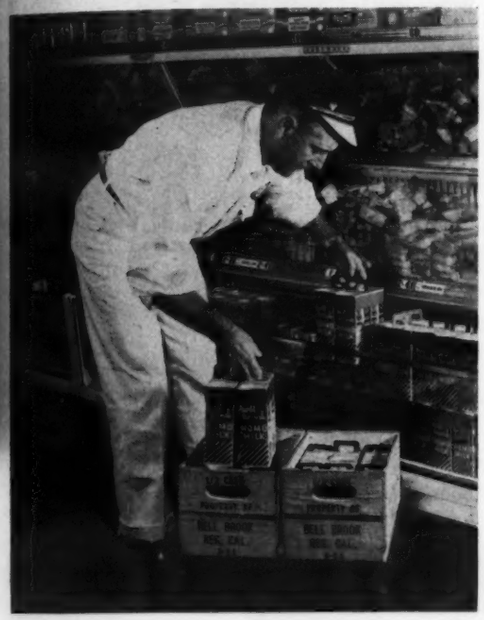
Popularity of multi-package items has skyrocketed in the past few years. At Bell Brook Dairies, Inc., San Francisco, 72% of their milk sales are in either half-gallon or two-quart bundled sizes. Sensing this trend in 1951, Bell Brook first marketed "twin-packaged" flat-top fiber cartons — two cartons taped together, with a carrying handle — and sales increased approximately 30% in the first six months after adoption.

The banding operation was manual, however, which tended to hold back expansion of the twin-packaged method. The only way to speed up production was to hire more people and sacrifice more space. Therefore, a prototype of an automatic twin-packaging machine was installed in 1952 which operated at 120 cartons per minute. Based on the experience gained from operation of this machine, a production model capable of operating at 200 quarts per minute was developed and is now in use.

Popularity of the twin packaging is shown by the present sales figures: Only 27½% of packaged milk marketed by Bell Brook is now sold in single quart cartons. Bell Brook (which wholesales to stores, has no home routes) sells in both half-

Automatic twin-packaging machine at Bell Brook Dairies assembles two quarts at time, inserts carrying handle, tapes containers securely together at rates to 200 quarts per minute

Twin-packaged quarts are convenient to handle, contribute to impulse sales ▼



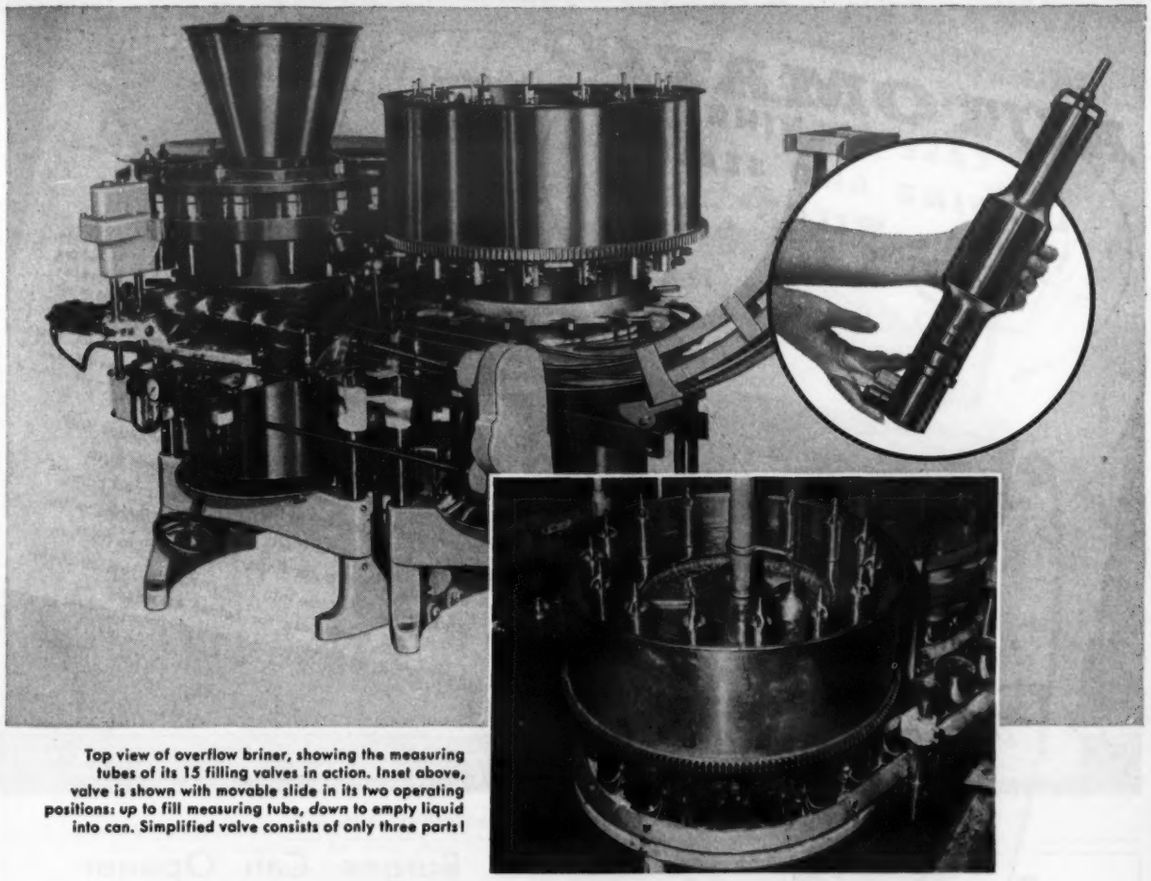
gallon single containers, and the two-quart, twin-package, with 65% of total sales in the twin-package, and 7½% in the half-gallon container. Furthermore, the single half-gallon package sells for one cent less than the twin two-quart package.

Operating details

The machine which packages the "twins" takes two fiber containers (quarts), inserts a cardboard handle between them, and tapes the cartons together tightly. Here is how it operates: Cartons come in single file from the filler, enter a turntable in twos. The paired cartons enter a main turntable, picking up the paper band which is fed from a roll holding 10,500 feet. Edges of the band are folded over as tape comes from roll, which increases its effective strength some 5 times. Tape is automatically cut at proper length.

The handles, as they feed from magazine at next station, are folded with two lips — which form a shoulder on each side of the handle. This handle is inserted between the two cartons (see photo). The cartons, when banded together, hold

(Continued on next page)



Top view of overflow briner, showing the measuring tubes of its 15 filling valves in action. Inset above, valve is shown with movable slide in its two operating positions: *up* to fill measuring tube, *down* to empty liquid into can. Simplified valve consists of only three parts!

New Filling Principle Improves Accuracy of Fill on this FMC 15 Station Filler

Long a favorite for filling and brining such products as peas, beans and whole grain corn, the famous FMC 15 Station Filler takes on a "new look" and new accuracy with the introduction of an overflow briner with simplified, two-position pre-measuring briner valves. This, plus many improvements in the product filler, combine to make it the most accurate two-in-one filler of its type. Spillage and waste of product and brine are virtually eliminated by the FMC "No can —No fill" mechanism, banked can track, smooth feed, tangential transfer and easy take-off of cans. Get full information on the many money-saving features of this truly outstanding FMC Filler.

Write, or call your nearest FMC representative

OTHER FMC FILLING EQUIPMENT

- FMC 8 Station Filler
- FMC 30 Pocket M & S Filler
- FMC Frozen Food Carton Filler
- FMC Hand Pack Fillers
- FMC Juice Fillers
- FMC Soup Fillers
- Utility Fillers

Key to food equipment

fmc

FOOD MACHINERY AND CHEMICAL CORPORATION

Canning Machinery Division

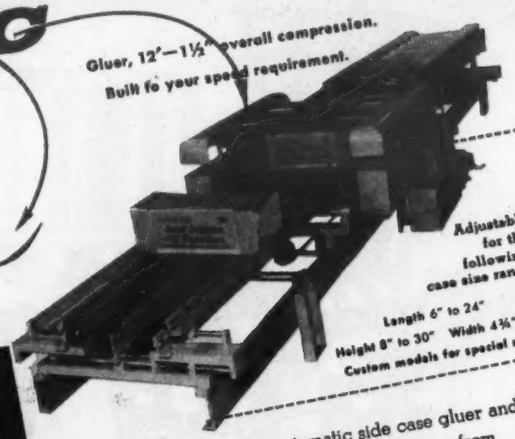
General Sales Offices:

WESTERN: SAN JOSE, CALIFORNIA EASTERN: HOOPESTON, ILLINOIS

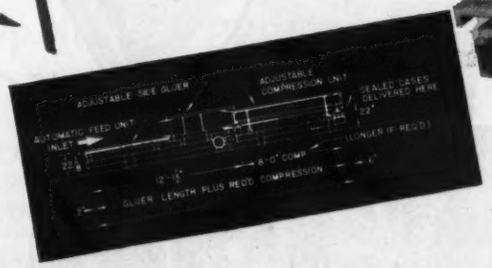
When inquiring check FP 2336 on handy form, pgs. 2-3

AUTOMATIC
CASE OPENING, LOADING AND SEALING WITH
Packomatic

Glues, 12"—1½" overall compression.
Built to your special requirement.



Adjustable for the following case size range:
Length 6" to 24"
Height 8" to 30" Width 4¾" to 16"
Custom models for special sizes.



..... Pictured is the automatic side case gluer and compression sealer. It receives filled cases from automatic loader—case flat, resting on broad panel. Automatically tucks inner flaps, applies adhesive to inner surface of outer flaps, folds flaps into position and discharges case into side belt compression sealer.
Please ask for Folder 400-53A.

J. L. FERGUSON COMPANY
JOLIET, ILLINOIS

Packomatic PACKAGING MACHINERY
New York Chicago Cleveland Boston Baltimore Portland Denver
Los Angeles San Francisco Seattle New Orleans Tampa

When inquiring check FP 2337 on handy form, pgs. 2-3

Another First!
HEAVIEST DUTY
PISTON FILLER EVER BUILT

ESTABLISHED Hope SINCE 1908

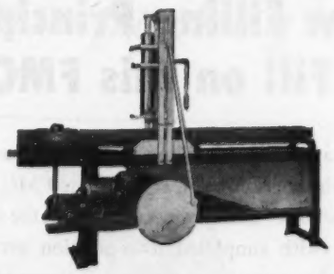
★ RISING TABLE
Infinitely adjustable. No cam rails or steps
★ QUANTITY CONTROL
One point adjustment, vernier on each piston
★ NO CONTAINER—NO FILL
Save product and clean-up time
★ ADJUSTABLE HEAD
Filling head on heavy duty jack screws
★ NEW JAR FEED
Straight push with up and over action
★ JAR CLEANER
Double turnover jar cleaner—optional

VISIT US IN BOOTH #1284 AT PACKAGING SHOW IN CHICAGO
IDEAL FOR COLD PACK PEANUT BUTTER, MAYONNAISE JAMS, JELLY, PRESERVES AND VISCOUS PRODUCTS
Write for information and Catalog 45
FASTEN TO LETTERHEAD AND MAIL TODAY!

HOPE MACHINE CO.
9400-20 STATE RD. PHILA. 14, PA.

When inquiring check FP 2338 on handy form, pgs. 2-3

Burgee Can Opener



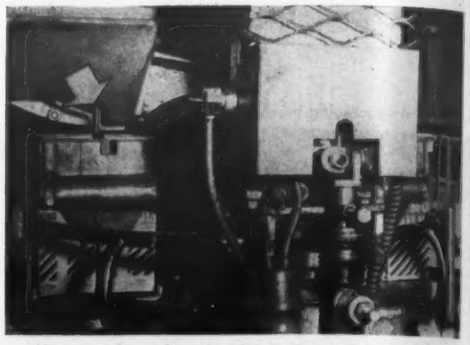
OPENS . . . EMPTIES . . . RINSES
AUTOMATICALLY!

- Opens, empties and rinses up to twenty No. 10 cans every minute.
- Handles any liquid or semi-liquid that will drain from a 4" opening.
- Needs no operator . . . does the work of four men.
- Provides cleaner, more efficient handling—no loss due to spilling or splashing of product.

For more information about the Burgee Can Opener and its companion unit, the Burgee Can Crusher, write:

F. H. Langsenkamp COMPANY
229-235 EAST SOUTH STREET, INDIANAPOLIS 7, INDIANA

When inquiring check FP 2339 on handy form, pgs. 2-3



Close-up shows how handle is inserted by machine (arrow). Box to right is glue ejector

(*Continued from preceding page*)

the handle snugly — the shoulders of the folded sides of the handles securely locked beneath the overhang of the flat-top cartons.

After insertion of the handles, the two cartons arrive at gluing station, where a spot of glue is ejected, and the band is closed with an overlap. The twin-packaged quarts are then discharged to a conveyor.

A portion of the top corner of the tape is left unglued at the overlap, making it simple for the housewife to pull the resultant tab to separate the quarts.

Both the bands and handles are made from high wet strength stock, so that the cartons may be iced without danger of softening from melting ice.

(Edlo Automatic Twin-Pak machine, bands, and handles — patents pending — are developments of Edlo, Inc., Dept. FP, 191 Eighth St., San Francisco 3, Calif. . . . or for more information check FP 2340 on handy form, pages 2 and 3.)

Fills liquids, semi-solids up to 800 cpm, features simplified filling mechanism

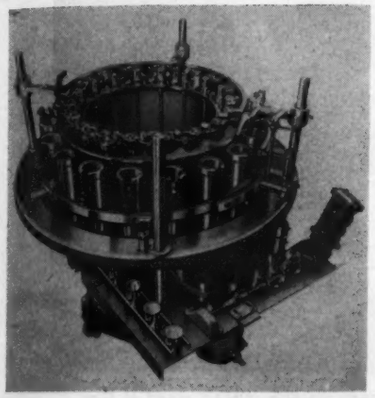
"Poppet" valve gives leak-proof, metal-to-metal seal—one adjustment governs fill accuracy

Unveiled at the Canners Show in Chicago was a high-speed filling machine which incorporates a simplified volumetric filling valve mechanism, quick take-down for cleaning, and simplified basic construction. Fillers will handle up to 800 cpm, can be used for both liquids and such semi-solids

as dog food, applesauce, peanut butter, and meat spreads — in tin, glass, and some cartons.

Design idea is built around a simple "poppet" type of filling valve. A positive metal-to-metal seal is obtained by fitting tapered cylinder into a metal seat. As the can comes under the filling valve, a cam which runs along the top of the filler bowl lifts the valve rod, opening the discharge part to allow the product to flow into the container.

The poppet-type filling valve is made more positive by designing a "guide-rod" arrangement below the seating face, as an integral part of the valve.



Valve rods, shown inside filler bowl, and the exterior filling cylinders take-down easily for cleaning without use of tools

▲ Detail shot shows no-tool, cam-locking feature on valve rod

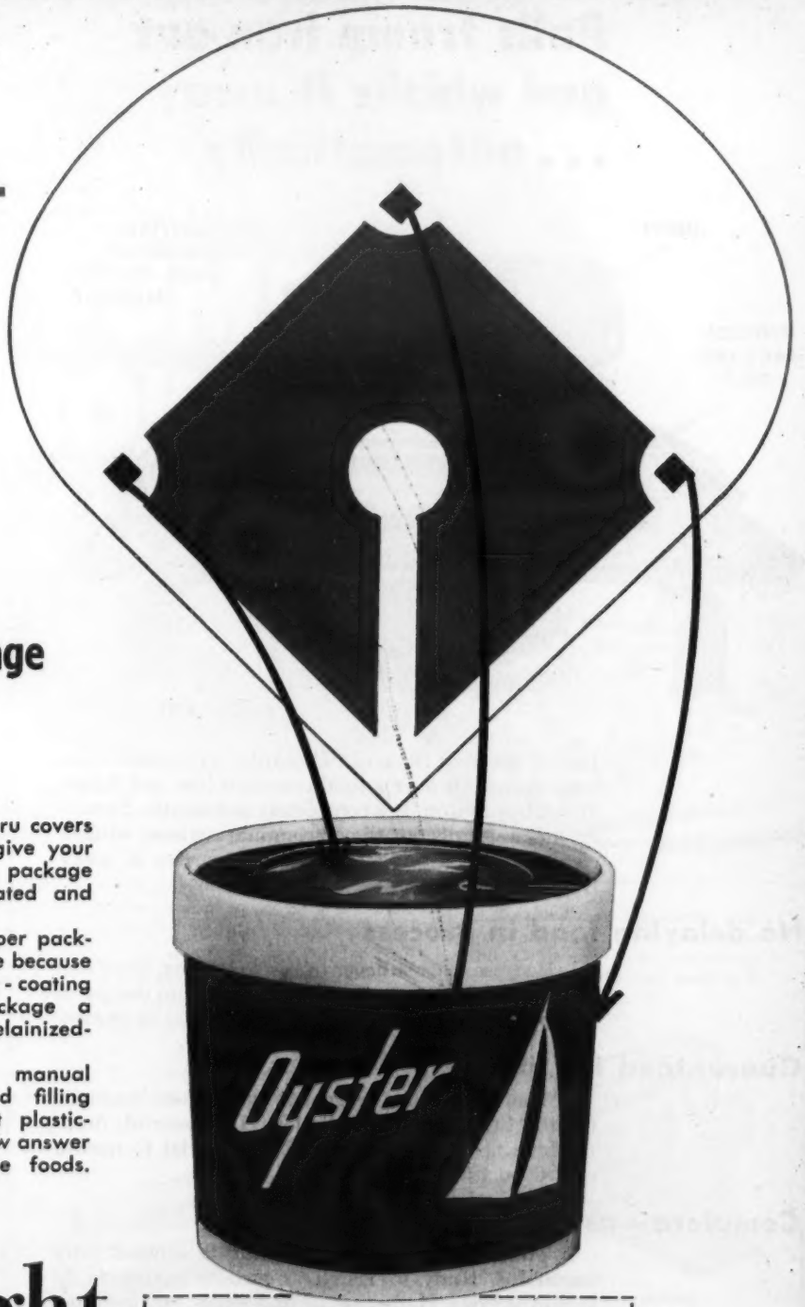
◀ Fill volume is controlled by turning this adjustment at bottom right

This lower rod (extending 1/32" below the discharge sort) pushes any material out of the discharge port as the entire valve rod lowers. This action shears off any fibrous material—such as a piece of meat—which might otherwise prevent the poppet-valve from closing, after can has been filled. This action, plus the metal-to-metal contact of the valve and valve slot, prevents leakage from individual cylinders.

No springs are used in the filling operation. Only two springs are used in the entire filler — one to release the no-can-no-fill lever, the other to

(*Continued on page* 43)

a "TRIPLE-PLAY" that's making a hit for Hard-to-Package Foods



Paper, plastic, and see-thru covers are joining together to give your specialty frozen foods a package that can be frozen, heated and served in.
Here's a new idea in paper packaging. And it's being done because Sealright's new plastic-coating process gives your package a leakproof, stronger "porcelainized-look."
Easily adaptable for manual handling or high speed filling equipment, the Sealright plastic-coated container is the new answer for your hard-to-package foods.

Sealright

PLASTIC-COATED PAPER CONTAINERS

Oswego Falls Corp.—Sealright Co., Inc., Fulton, N. Y., Kansas City, Kansas—Sealright Pacific, Ltd., Los Angeles, California—Canadian Sealright Co., Ltd., Peterborough, Ontario, Canada.

SEALRIGHT CO., INC., Fulton, N. Y. FP534

Please send me some samples and more information on Sealright's newest idea in paper packaging for frozen food.

Name.....

Company.....

Address.....

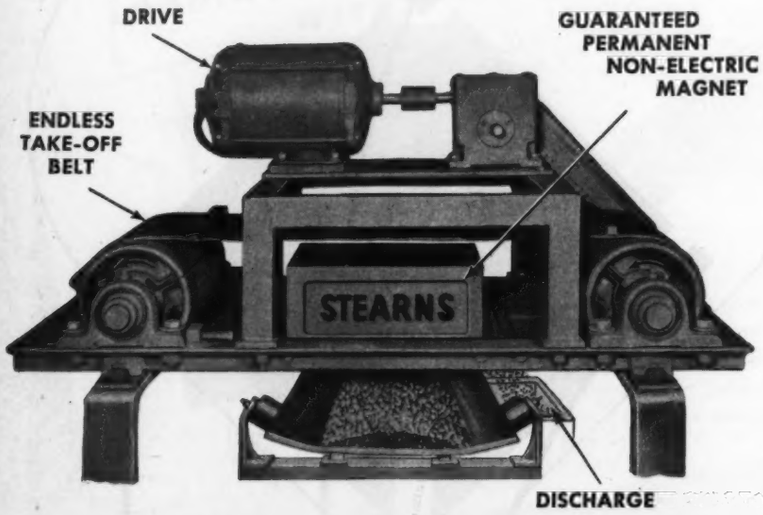
City..... Zone..... State.....

My Distributor is.....

We use SEALRIGHT SANITARY SERVICE for Your Protection

When inquiring check FP 2341 on handy form, pgs. 2-3

Pulls tramp iron out and whisks it away . . . automatically



Install this new Stearns "Discardo" cross-belt magnetic separator over a food conveyor line and forget about tramp iron. It's completely automatic. Powerful magnet pulls out the contaminating iron, while a cleated, self-cleaning endless belt carries it away from the magnet face.

No delaying food in process

Because magnet never requires cleaning, there's no need to stop food conveyor. Also there's no danger of tramp iron ever dropping back into the food in process.

Guaranteed for life

The non-electric magnet is guaranteed magnetic for the life of your installation. Its powerful, deep-reaching field penetrates way into material to remove embedded tramp iron.

Complete—as illustrated

The "Discardo" magnetic unit is shipped fully assembled, ready to install. Fourteen models to fit conveyor belts, chutes, or sorting tables ranging from 8 to 14 inches wide. Custom-built models on request. Purify your product, protect equipment with this modern, fully automatic magnetic separator. Write for Bulletin 6910 or get details from your Stearns representative.

1123

MAGNETIC EQUIPMENT FOR ALL INDUSTRY

STEARNS MAGNETS

STEARNS MAGNETIC, INC., 670 S. 28th St., Milwaukee 46, Wis.

When inquiring check FP 2342 on handy form, pgs. 2-3

packaging section

Plant Supt. C. V. Newton inspects automatic insert machine, placed ahead of filler on four-oz can line at Diamond Walnut

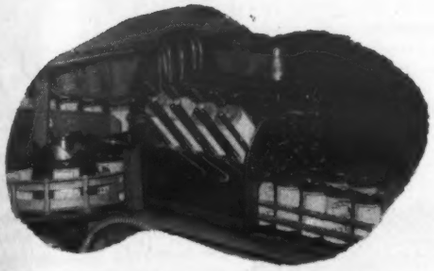
Manually placing premium-offer inserts in cans was only 80-85% efficient. Now, no operator is needed, as machine

dispenses inserts with 100% accuracy

Formerly: Including inserts, recipe folders, and premium offers with food product packages is fine for the sales department . . . but can mean expense and slow-downs in the production department. California Walnut Growers Ass'n. (Diamond Walnuts) was faced with this problem at their main packaging plant in Vernon, Calif.

One or more girls were stationed along the conveyor which carried the 4-oz cans into filling and closing units. They placed inserts — circular disks of parchment paper, carrying premium offers — in each empty can as it passed. At production line speeds — over 120 a minute — cans slipped by fast. Girls could place an insert in each can for short periods, but over the eight-hour shift fatigue, monotony, and the hypnotic factor of moving cans lowered accuracy into a range of around 80-85%.

To have any customers who were interested in the premium offer disappointed was abhorent to management — so the production department was commissioned to find a more accurate method of dispensing the inserts.



Close-up of machine, showing four feed stacks on one side

Now: Inserts are dispensed from an automatic unit which occupies only 2 feet of the conveyor line, dispenses inserts to every can which passes, with accuracy of practically 100%. Machine is vacuum-operated, has four feed stacks above each row of the double-row conveyor. Vacuum suction cup pulls an insert from each stack as a set of four cans passes. Insert is lowered into position above can, and drops when vacuum is broken. There are no micro switches or other electrical units used.

Machine operates at rates of 150 per minute, and dispenses only when cans are feeding into filler. No operator is required, except to fill feed stacks about once every three hours.

(Automatic Insert machine is product manufactured by Ace Specialty Mfg. Co., Dept. FP, 9616 East Valley Blvd., Rosemead, Calif . . . or for more information check FP 2343 on handy form, pages 2 and 3.)

Fills 800cpm

(*Continued from page* 41)

maintain slight tension at a transfer point.

Volumetric filling pistons are of one piece, with no connecting rods. Complete take-down for cleaning is accomplished without tools. A clean-out plug is located at bottom of each piston cylinder. Filling accuracy can be controlled during operation by simple micrometer adjustment. Valve seats are replaceable, and valve diameters can be changed to meet product requirements. Top and bottom fill arrangements, as well as gravity units, are available. Two frame sizes will accommodate 12, 18, and 27 filling heads.

(Librascope filling machines are distributed through W. F. & John Barnes Co., Process Equipment Div., Dept. FP, 301 S. Water St., Rockford, Ill. . . . or for more information check FP 2344 on convenient Reader Service slip found between pages 2 and 3.)

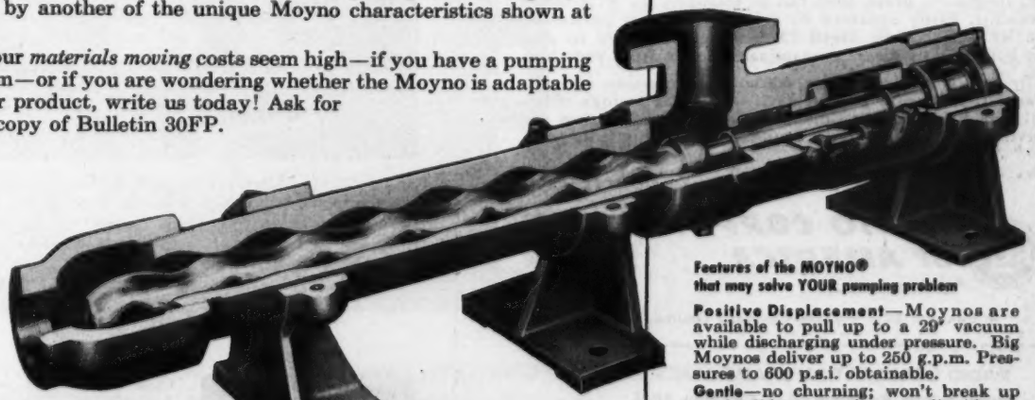
Plenty! That is, if the material you handle, like chow mein, *will go through a pipe.* If it will, the amazing Moyno Pump may be just what you are looking for!

This pump is *different*, without being a prima donna. It is *new*, yet thoroughly service-proved for liquids, pastes, solids in suspension, abrasive-laden slurries, and a long list of other applications.

Perhaps, like the chow mein producer, you need to handle materials smoothly, without squeezing. The answer is *progressing cavities*—found only in the Moyno. Or, your problem might be solved by another of the unique Moyno characteristics shown at right.

If your *materials moving* costs seem high—if you have a pumping problem—or if you are wondering whether the Moyno is adaptable to your product, write us today! Ask for a free copy of Bulletin 30FP.

***About the chow mein application:* ladling proved to be too slow and expensive. Ordinary pumps made soup out of the celery. Moynos work perfectly; cost ⅓ less!**



Features of the MOYNO® that may solve YOUR pumping problem

Positive Displacement—Moynos are available to pull up to a 29" vacuum while discharging under pressure. Big Moynos deliver up to 250 g.p.m. Pressures to 600 p.s.i. obtainable.

Gentle—no churning; won't break up semi-solids . . . won't aerate liquids.

Reversible—pumps with equal efficiency in either direction.

Trouble-Free—self priming; won't cavitate or vapor-lock. Just one moving part—no valves to stick, no pistons to gum up. Built for tough service. Easy to maintain.

Versatile—adaptable to washers, drink dispensers, gasoline pumps, oil burners, etc.—or can be custom-designed to meet your requirements.

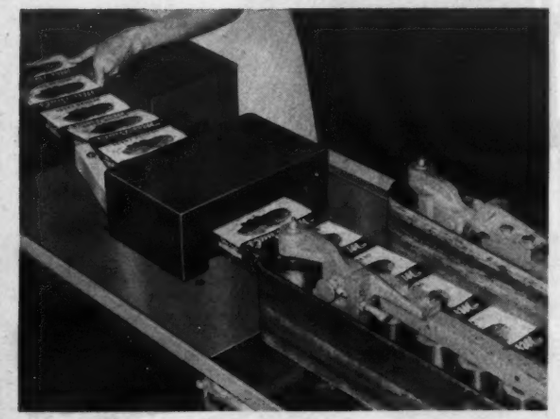
ROBBINS & MYERS, INC.

SPRINGFIELD 99, OHIO • BRANTFORD, ONTARIO

Fractional & Integral H.P. Motors & Generators | Moyno Pumps | Propellair Industrial Ventilating Equipment | Electric Fans | Electric & Hand Hoists & Cranes

When inquiring check FP 2345 on handy form, pgs. 2-3

FROZEN FOOD PROTECTION...



RCA Electronic Metal Detector

Plants at Philadelphia and Doylestown, Pa., where Mrs. Paul's Frozen Sea Foods are packaged, make use of RCA Metal Detectors to give assurance of product purity above and beyond the usual inspection. Workers inspect the completed package for uniformity of seal and wrapper, removing any packages that do not come up to standard, or that may be rejected by the Metal Detector.

No matter how deeply embedded in your product, bits of tin, aluminum, brass, steel can be found by the RCA Metal Detector. Easily operated by your own factory personnel, the RCA Electronic Metal Detector can be used to stop the conveyor or divert contaminated items from your line.

Why not get this positive automatic protection for your plant? It will soon pay for itself out of the savings effected! The RCA Service Company provides installation and service facilities to keep the equipment operating at its peak.

RCA . . . the world's best name for QUALITY

RADIO CORPORATION of AMERICA
CAMDEN, N.J.

In Canada: RCA VICTOR Company Limited, Montreal

RADIO CORPORATION of AMERICA
Dept. P-243, Building 15-1, Camden, N. J.

Please send me information on the RCA Electronic Metal Detector for food applications.

Name _____ Title _____

Company _____

Address _____

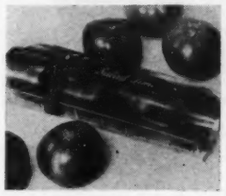
City _____ Zone _____ State _____

When inquiring check FP 2347 on handy form, pgs. 2-3

Package NEWS-OF-THE-MONTH

Tips and pointers . . . what's new in products and package design . . . and "where-to-go" for more information

Portion-control packages for mustard, ketchup, etc. are made of cellophane coated with polyethylene. Perforated notch is provided at one corner for easy opening. Composite film has high tear, burst, and tensile strengths, resists moisture, yet remains flexible at low temperature. Coated with Bakelite polyethylene, Cellothene film is heat sealed into Custom-Pak unit packages produced by Custom-Pak, Inc., Dept. FP, 3810 Hires Lane, Cincinnati 12, Ohio . . . or check FP 2348.



Here's a *full-view plastic tray package* which allows inspection of all sides of the tomatoes, other produce which the housewife buys "prepackaged". The tray doesn't obscure the part of the product which might have mold, soft spot, or other defects. These tomatoes are packed by The Crosset Co., Cincinnati, in plastic tray and cellophane overwrap designed by Oneida Paper Products, Inc., Dept. FP, Clifton, N. J. . . . or check FP 2352.

Combination ready-made mold, and reusable refrigerator jar can be displayed upside-down, to show off both the product and the fluted glass container. Label on bottom, plus decorated top, offers two-way impact for the vegetable and fruit salads offered by Salads, Inc. 14-oz jar is by Fairmount Glass Works, Indianapolis. Metal screw cap is by Armstrong Cork Co., Dept. FP, 1010 Concord St., Lancaster, Pa. . . . or check FP 2349 on handy form.

Frozen food package for use with hot-filled and semi-liquid foods, such as chicken a la king, cooked squash, stews, and disjointed chicken, is lined with cellophane, allows line speeds of over 150/min. Lined carton, with dual corner locks and top edge "stripper" lock, is development of Klik-lok Corp., Dept. FP, 405 Lexington Ave., New York, N. Y. . . . or check FP 2353 on handy form.

Safe shipping of produce in view package is making this acetate-window package popular on West Coast. Recessed bottoms provide a telescoping feature for easy stacking, shipping, and display. Cartons are bottom-filled. Retailer tears off protective die-cut flaps, exposing acetate window. Sunny-Paks, in 2 and 3 lb units, are produced by Marathon Dept. FP, Menasha, Wis. . . . or check FP 2350.

A *12-can carry-home beer carton* is designed to serve as shipper, point-of-purchase eye-catcher, and convenient carrier. Called the "Weekender", carton is made of water-resistant plastic-coated Kraft board, has built-in carrying handle. Five breweries are now using them, including Champagne Velvet, E & B, Burger, and Hudepohl, according to supplier, Atlanta Paper Co., Dept. FP, P. O. Box 4417, Atlanta 2, Ga. . . . or check FP 2354.

Clear plastic lids for Dixie cup packages are made of polystyrene through process which overcomes normal brittleness of this material. The overall lid forms primary seal with cup's bead, and overlaps the brim for sanitary sealing. Suitable for use in freezers as well as normal hot-fill products, lids are offered for use with 8, 12, and 16-oz Dixie cups. Polyflex lids are manufactured by Plax Corp., Dept. FP, Box 1019, Hartford, Conn. Check FP 2351.

A standard *4-oz nursing bottle is the package* for Clapp's new product, fruit juice for babies. Mother just removes cap, adds nipple, and baby starts sucking the fruit juice blend (oranges and apples). Orange juice is low in acid and peel oil. Vitamin C is added. For laxative, an alternate variety contains prune juice. Bottle by Thatcher Glass Mfg. Co., Dept. FP, N. Y. . . . or check FP 2355.

BUYERS GUIDE

for Marking, Numbering, Coding, Perforating, Printing Machines and Attachments

Editors contacted all known suppliers of marking and coding equipment to ascertain if their products are used in the food industry. From the replies, the following Directory has been prepared. Complete addresses of these suppliers are found on next page

ADDRESSING MACHINES
The Multistamp Company

CARTON PRINTING MACHINES
Diagraph-Bradley Industries, Inc.

CODE DATING MACHINES
Adolph Gottscho, Inc.
Industrial Marking Equipment Co.

CODE MARKING MACHINES
The American Perforator Company
Chisholm-Ryder Co. of Pennsylvania
J. L. Ferguson Company
A. Kimball Company
New Jersey Machine Corp. (for individual labels, bottle labeling, tuck end cartons)
Standard-Knapp Div., Emhart Mfg. Co. (cases)
B. Verner & Co., Inc.

DRUM PRINTING MACHINES
Jas. H. Matthews & Co., Inc.

DUPLICATING MACHINES
The Multistamp Company

EMBOSSING CYLINDERS
Modern Engraving & Machine Company

EMBOSSING MACHINES
Swan Machine Company

GRAVURE CYLINDERS
Modern Engraving & Machine Co.

IMPRINTING MACHINES
J. L. Ferguson Company (case and fibre box)
Adolph Gottscho, Inc.
A. Kimball Company

INKS
Diagraph-Bradley Industries, Inc. (blockout, marking, meat branding, stamp pad, stencil)
Ideal Stencil Machine Company (black & colors)
Jas. H. Matthews & Co., Inc. (cellophane, boxes, food, label code printing, metal marking, stencil)

LABEL PRINTING MACHINES
Master Addresser Company (for printing shipping labels)
Jas. H. Matthews & Co., Inc.
The Monarch Marking System Company
The Multistamp Company (for marking)

LETTERPRESS
Miller Printing Machinery Co. (single and two-color)

LITHO CAN PRINTING MACHINE
Jas. H. Matthews & Co., Inc.

MARKING MACHINES
Chisholm-Ryder Co. of Pennsylvania
J. L. Ferguson Company (can and carton)
Adolph Gottscho, Inc.
Industrial Marking Equipment Co.
A. Kimball Company
Markem Machine Company
Jas. H. Matthews & Co., Inc. (special purpose)
The Multistamp Company
B. Verner & Co., Inc.

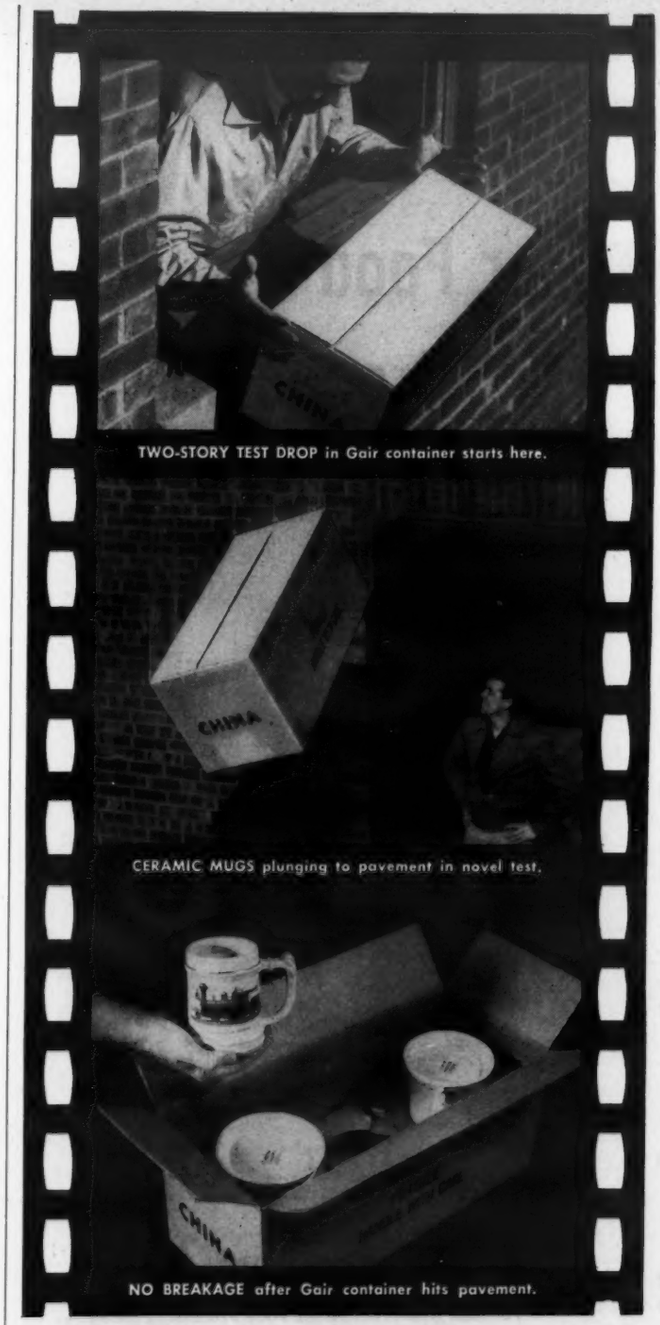
NUMBERING MACHINES
The American Perforator Company
Chisholm-Ryder Co. of Pennsylvania
J. L. Ferguson Company
Industrial Marking Equipment Company
A. Kimball Company
Jas. H. Matthews & Co., Inc. (for corrugated cartons)
Standard-Knapp Div., Emhart Mfg. Co. (cartons, cases)
B. Verner & Co., Inc.

OFFSET PRESS
Miller Printing Machinery Co.

PERFORATING MACHINES
The American Perforator Company
Chisholm-Ryder Co. of Pennsylvania
J. L. Ferguson Company
Swan Machine Company

PRINTING MACHINES, PRESSES, AND EQUIPMENT
Black-Clawson Co., Dilts Machine Works Div. (flexographic)
Champlain Company, Inc. (rotogravure)
Chisholm-Ryder Co. of Pennsylvania
J. L. Ferguson Company
Dependable Compressor & Machine Co. (screen printing for polyethylene, glass, metal, wood, rubber)
Elliott Mfg. Co. (rotary printing, for wood or fiber)
The Inta-Roto Machine Company, Inc. (aniline and flexographic, rotogravure printing)
Ideal Stencil Machine Co. (attachments)
Industrial Marking Equipment Co. (marking; embossing & debossing; stamping; rubber type for fibre box, board, plastics, labels, cartons, packages)
Mercury Engineering Corporation (flexographic, rotogravure)
Standard-Knapp Div., Emhart Mfg. Co. (printing and stamping for cartons, cases)

(Continued on next page)


TWO-STORY TEST DROP in Gair container starts here.
CHINA
CERAMIC MUGS plunging to pavement in novel test.
CHINA
NO BREAKAGE after Gair container hits pavement.

Ceramic mugs tumble two stories – no damage!

New shipping container holds breakage claims to phenomenal 0.035%

That's the happy ending to L. G. Balfour Company's long search for the safest practical way to ship ceramic mugs.

General Manager Ed Holder faced a twofold packaging problem. First, ceramic mugs need a lot of protecting in transit. Second, the package had to take three different styles and sizes of mugs.

Gair came up with the answer to both problems with one ingeniously die-cut interior packing piece which cushions the mugs from all shocks. Out of 150,000 units shipped in the new container, only 53 breakage claims have been made. Also, since no partitions have to be set up and no excelsior or paper-stuffing is used, *one* packer now does the work of *four* previously required.

Whether it's protection, display or delivery you're looking for in a shipping container, Gair has the experience and facilities to give it to you. Write us. SC.5.1

YOU'RE LIVING NEXT DOOR TO THE EXPERTS

GAIR CONTAINER PLANTS: Atlanta, Ga. • Cambridge, Mass. • Cleveland, Ohio • Holyoke, Mass. • Los Angeles, Cal. • Martinsville, Va. • No. Tonawanda, N. Y. • Philadelphia, Pa. • Plymouth, Mich. • Portland, Conn. • Richmond, Va. • Syracuse, N. Y. • Teterboro, N. J.

SINCE 1864 GAIR®

GAIR — SHIPPING CONTAINERS — FOLDING CARTONS • PAPERBOARD

ROBERT GAIR COMPANY, INC. • 155 EAST 44TH STREET • NEW YORK 17, N.Y.

When inquiring check FP 2356 on handy form, pgs. 2-3

for Food Processing Advertisers*

The emblem at right is that of NBP—National Business Publications. You've probably seen it before on our contents page . . . rate card . . or heading the FOOD PROCESSING listing in Standard Rate & Data. Because we're proud of it.

It signifies that FOOD PROCESSING has qualified for membership in the largest association of technical, scientific and professional journals in the United States. (We're proud, too, that our F. P. executive staff includes a past president of NBP and a member of its Board of Directors.)

But belonging to NBP is more than a feather in our publishing cap. It's an important *plus* for every advertiser in FOOD PROCESSING. Here are the membership requirements. Judge for yourself:

- **Unbiased editorial content**
- **Periodic reader interest evaluation**
- **Non acceptance of questionable advertising**
- **Periodic audit of circulation**
- **Uniform rates to all advertisers**

In addition, NBP provides the framework for a continuing exchange of ideas among member publishers. The result: continuing improvement in publishing practices to make FOOD PROCESSING more useful to its readers . . . more productive for its advertisers.

NBP

NBP

Food Processing

For men who manage the Food Processing Industries

Published by Putman Publishing Company

Creators of PUTMAN-STYLE Magazines
. . . terse, vital editorial; "hand-picked" circulation; square, high-visibility format; quality readership; hence more READER ACTION

BPA NBP

PUTMAN PUBLISHING

★ Courtesy of the publication MEDICAL ECONOMICS, creator of this copy, here adapted to FOOD PROCESSING

Buyers Guide

(*Continued from preceding page*)

Swan Machine Company (aniline and rotogravure)
B. Verner & Co., Inc.

SLITTING MACHINES
Swan Machine Company

STENCIL CUTTING MACHINES
Diagraph-Bradley Industries, Inc.
Ideal Stencil Machine Company
Jas. H. Matthews & Co., Inc. (paper or metal)

STENCILING MACHINES
The Multistamp Company

STENCIL STAMPS
The Multistamp Company (for marking)

TAPE PRINTER
American Tape Printer Company

ADDRESSES

Complete addresses of suppliers listed in Buyers Guide

The American Perforator Company
Room 703, 625 W. Jackson Blvd., Chicago 6, Ill.

American Tape Printer Company
678 6th Avenue, New York 10, New York

Black-Clawson Co., Inc., Dilts Machine Works Div.
Fulton, New York

Champlain Company, Inc.
88 Llewellyn Avenue, Bloomfield, N. J.

Chisholm-Ryder Company of Pennsylvania
Hanover, Pennsylvania

Dependable Compressor & Machine Company
157 W. 21st Street, New York 11, N. Y.

Diagraph-Bradley Industries, Inc.
P.O. Box 269, Herrin, Illinois

Elliott Manufacturing Company
1735 Ventura Avenue, Fresno 1, Calif.

J. L. Ferguson Company
Joliet, Illinois

Adolph Gottscho, Inc.
Hillside 5, New Jersey

Ideal Stencil Machine Company
Belleville, Illinois

Industrial Marking Equipment Co.
454 Baltic Street, New York 17, New York

The Into-Rote Machine Company, Inc.
R.F.D. 6, Box 45, Byrd Airport, Richmond, Va.

A. Kimball Company
307 W. Broadway, New York 13, N. Y.

Markem Machine Company
Keene, New Hampshire

Master Addresser Company
P.O. Box 30, Minneapolis, Minnesota

Jas. H. Matthews & Co., Inc.
3942 Forbes Street, Pittsburgh 13, Pa.

Modern Engraving & Machine Company
1413 Chestnut Avenue, Hillside 5, New Jersey

Mercury Engineering Corporation
2100 North Farwell Ave., Milwaukee 2, Wis.

Miller Printing Machinery Co.
1101 Reedsdale St., Pittsburgh 33, Pa.

The Monarch Marking System Co.
218 South Torrence Ave., Dayton, Ohio

The Multistamp Company
531 W. 21st Street, Norfolk, Va.

New Jersey Machine Corp.
16th & Willow Ave., Hoboken, New Jersey

Standard-Knapp Div., Emhart Mfg. Company
Portland, Connecticut

Swan Machine Company
1151 Broadway, New York 1, New York

B. Verner & Co., Inc.
52 Duane Street, New York 7, New York

NEXT MONTH—
Several successful keys to the problem of gaining proper stacking characteristics of glass jars will be shown. Article will tell how glass and food technologists are gaining better stacking stability, thereby increasing the effectiveness of mass store displays

In-package Desiccation

(*Continued from page* 37)

expanded hydrated desiccant.

2. Rigid containers of cardboard are sometimes packed in larger containers, as in 5-gal cans of dehydrated vegetables. Desiccant container is only partially filled to allow room for expansion.

3. Heat-sealable packages made of stretchable paper have been considered most successful for retaining desiccant in commercial packs. Pouches are formed and filled on high-speed equipment, which bring them into a commercially economical range. Bags are filled almost completely, and the two-way stretch of the paper expands without rupturing or allowing desiccant to sift.

Product depth, form affects rate

When planning a container for use with in-package desiccation, the resistance of various components to the moisture-transfer within the package must be considered. As depth of product is increased, drying time for the product increases. For instance, orange juice powders required 41 days to reach a moisture of 0.7% when packaged at 2.7% moisture, at depth of 3 inches. At depth of 6 inches, 76 days were required. Size of the pieces of product also must be considered. Tests should be run on the same product at different cut sizes, in the case of vegetables or fruits, since the larger-size particles offer more resistance to in-package moisture transfer.

Storage temperature effects

Storage temperatures also affect rates of in-package drying. As storage temperatures are increased 18°F, drying rate doubles, and may triple in some cases. However, nonenzymatic browning rate increases 5 to 8-fold with each 18° rise. For products susceptible to this factor, storage should be maintained at moderate temperatures until a substantial part of the desiccation occurs. At this point, the dryness of the product protects it against such changes, and storage at elevated temp (100°F) for several months is possible.

(Calcium oxide for in-package desiccation is product of Filtrol Corp., Dept. FP, 3250 E. Washington Blvd., Los Angeles 23, Calif. . . . or FP 2358.)

(Stretchable, heat-sealable paper was developed for in-package desiccation by Mid-States Gummed Paper Co., Dept. FP, 2515 S. Damen Ave., Chicago, Ill. Check FP 2359 on handy form, pgs. 2-3.)

(Custom packaging of desiccants to specification is performed by R. Hurwich Co., Dept. FP, 1043 Hearst Ave., Berkeley, Calif. . . . or FP 2360.)

Editors Note: Those contemplating the use of in-package desiccation are referred to US Patent No. 2,520,878 presently owned by Minute Maid Corporation, Plymouth, Fla.

OLD-FASHIONED INDUSTRIAL WIPERS STEALING YOUR PROFITS?

Modernize your shop — save money — with new

Type 1300 KIMWIPES!

You'll be money ahead when you switch to Type 1300 Kimwipes. They're the modern new disposable wipers that actually replace old-fashioned cloth and waste wiping material and cost four to ten times less!

New Kimwipes 1300 are soft. Strong. Absorbent. A full 12″ x 18″ in size, they hold up to 8 times their own weight in liquids. They're non-abrasive, too. There's no holdover of metal chips or other infectious material that may cause dermatitis and loss of man hours. Type 1300 Kimwipes are absolutely clean to start with, and are disposed of after use. Ask your salesman for samples. And remember, there are two other kinds of Kimwipes you can choose from: Type 900-S (optical wipers) and Type 900-L (regular wipers). Save money. Order today!

Kimberly Clark
INDUSTRIAL WIPERS
Kimwipes

Kimberly-Clark Corporation • Neenah, Wisconsin

When inquiring check FP 2361 on handy form, pgs. 2-3

Printing Costs.....
Wrapping Materials.... 2500.00
New cost — $1250.00
50% savings in materials!
"JUST ONE REASON WHY
we're using CAMPBELL WRAPPERS
throughout our bakery chain!"
PRESERVES OVEN FRESHNESS — Prolongs shelf life. Positive heat or glue and crimp sealing insures sealed in freshness — prolongs sale life of cakes, cookies, crackers, donuts, rolls, pies and other specialties.
SEALS IN FLAVOR — Increases repeat sales. Customers can rely on the distinctive flavor of your products always being up to your standard when package-sealed on the Campbell Wrapper.
WRAPS WITHOUT DAMAGE — Reduces dealer returns. Cream-filled cookies, pies, or crisp crackers and other products are wrapped without breakage by the exclusive Campbell "float" wrapping method — regardless of product's shape.
HIGH SPEED — Increases production at lower cost. Campbell Wrappers are precision made for fast, steady operation — Wrap from 100 to 300 single or multiple item units per minute.
USES ALL WRAP MATERIALS — No stiffeners unless desired! Paper, cellophane, polyethylene, foils, and all the new plastic films may be used. Modernize your packaging methods now — Write for complete information.
SAVES LABOR — Requires no skilled help. Equipped with automatic feeds, one person often tends and operates several Campbell Wrappers at one time.
Write for this Campbell wrapper booklet — showing how it packages and the wide variety of products it wraps.
Campbell
WRAPPER
HUDSON-SHARP MACHINE CO. • GREEN BAY, WIS.
Manufacturers of Aniline and Gravure Presses, Folders, Interfolders, Laminators, Waxers, Embossers, Slitters, Sheeters, Roll Winders, Packaging Machines, Creepers and Tissue Converting Units
NEW YORK • 55 West 42nd St.

When inquiring check FP 2362 on handy form, pgs. 2-3

KEY TO EXHIBITORS AT packaging exposition

International Amphitheatre
Chicago, Illinois • • • April 18-21

Booth	Exhibitor	Product*
1164	A-B-C Packaging Machine Corporation	E, G
665	Abbott Plastic Machine Corporation	A, C, D
1222	Acme Steel Company	B, E
237	Addressograph-Multigraph Corporation	D, F
403	Ajusto Equipment Co.	H
433	Alemite Division, Stewart-Warner Corporation	B, C
1221	Algene Marking Equip. Co.	F
849	Aluminum Company of America	C
1080	Aluminum Foils, Inc.	A
693	Ambassador Plastics & Manufacturing Corp.	A
949	American Can Co.	A
754	American Excelsior Corp.	D
1165	American Marking Corporation	F
1265	American Partition Co.	A
1211	American Type Founders	F
1013	Amsco Pack. Mach. Inc.	D
675	Anderson Bros. Mfg. Co.	C
1185	Apex Machine Co.	I
972	Arabol Mfg. Co.	D
610	Arenco Machine Co. Inc.	C
1227	Armour & Company, Curled Hair Department	E
670	Arvey Corporation	A
337	Askania Regulator Co.	G
625	The Associated Cooperage Industries of America	A
1072	Atlas Plywood Corp.	A
1274	Automatic Web Control Manufacturing Co.	G
766	Avery Adhesive Label Corporation	A, D
926	Bakelite Co., Div. Union Carbide & Carbon Corp.	A
994	Bartelt Engineering Co.	A, C, E
786	Battle Creek Packaging Machines, Inc.	C, D
715	Charles Beck Machine Corp.	G
1118	Bemis Bro. Bag Co.	A, B, C
854	Bensing Brothers & Deeney Sales Company	D
536	Better Packages, Inc.	C
853	Biner-Ellison Mach. Co.	C
956	E. L. Bivans, Inc.	E, F
679	The Black-Clawson Co., Inc., Dilts Machine Works Division	I
1263	Blocksom & Company	I
864	Bostitch, Incorporated	C, E
413	Bradley Associates, Inc.	I
223	Bradley Container Corp.	A, C
505	W. Braun Co.	A
736	Brown Bag Filling Machine Co., Incorporated	C
1243	The Brown-Bridge Mills	D
646	B. H. Bunn Company	I
663	Burlap Council of the Indian Jute Mills Assn.	I
762	F. N. Burt Co. Inc.	A
637	Burt Machine Co.	D, E
883	C.I.T. Corporation	H
1260	California Wire Products Co., Incorporated	I
1195	Cameron Machine Co.	C
1170	Cargo Packers Inc.	C
992	Celanese Corp. of America	A, G
531	Celluplastic Corp.	A
1114	The Celon Company	A
211	The Celotex Corp.	A, B
509	Celwa Products Co.	E
725	Central States Paper & Bag Company	A
685	Ralph Chaffee & Co.	C
423	Chain Belt Company	B
1205	Champlain Company Inc.	I
523	Chase Bag Company	A
303	Chase Equipment Corp.	B
1049	The Chaspec Mfg. Co.	A
776	Cheslam Corporation	I
776	Chester Packaging Prod. Corp.	A
966	Chippewa Paper Prod.	A
617	Chisholm-Ryder Co. of Pennsylvania	B, C, D, E, F
1279	The Clark-Aiken Co.	G
214	Clark Equipment Co., Industrial Truck Div.	B
1133	Cleveland Container Co.	A
1238	Clybourn Machine Corp.	C, E
1246	E. D. Coddington Manufacturing Company	C
770	Arthur Colton Co.	C
699	Comet Industries	I
1113	Consolidated Packaging Machinery Corp.	C
801	Container Equipment Corp.	I
1050	Continental Can Co.	A
722	Counsel Machine Co.	B, C
695	Craig Machine, Inc.	A
213	Cromwell Paper Co.	A
836	Crown Cork and Seal Co.	A, C
730	Crystal Tube Corp.	A
301	Cushman & Denison Manufacturing Company	I
631	Daher Company	A
430	Daily News Record	I
411	Delaware Ribbon Manufacturers, Inc.	I
527	Dennison Mfg. Co.	D
1129	Derby Sealers, Inc.	D
1089	Dewey and Almy Chem. Co.	A, C, D
513	Dispens-A-Label Devices	D
690	Dixie Wax Paper Co.	A
822	The Dobeckmun Co.	A
706	Doughboy Industries	C, D
806	Dow Chemical Co.	A
735	Dumatic Industries	D
936	E. I. du Pont de Nemours & Co., Film Dept.	A
1039	E. I. du Pont de Nemours & Co., Kinetic Chain Drive Div.	H
1035	E. I. du Pont de Nemours & Co., Polychemicals Dept.	A
437	Durethene Corporation	A
1240	John Dusenbery Co.	I
872	Eastman Chemical Products, Incorporated	A, D
850	Economic Machinery Co.	D
989	Ekco Products Co.	A, C
224	Elberta Crate & Box Company, Incorporated	A
314	Electric Sorting Machine Company	H
795	Electronic Machine Parts, Inc.	H
726	Elgin Mfg. Co.	C
638	Elliott Mfg. Co.	B, E, F
664	Enjay Company, Inc.	I
501	Errich International Corp.	B, C
775	Exact Weight Scale Co.	B
759	Federal Tool Corp.	A
1299	Felins Tying Mach. Co.	E
1139	J. L. Ferguson Co.	E
1248	Fibre Drum Mfgers. Assn.	A
419	The F. G. Findley Co.	D
628	Dave Fischbein Co.	C
713	Food Engineering	I
1013	Food Machinery and Chemical Corporation	C
677	Frankel Eng. & Mfg. Co.	I
630	H. B. Fuller Company	D
769	Fulton Bag & Cotton Mills	A
1005	Robert Gair Company	A
126	The Gardner Board and Carton Company	I
805	Gaylord Container Corp.	A
772	General Box Company	A

Who may register: All industry personnel are invited to the National Packaging Exposition (free registration). To attend accompanying conference, a fee of $40 is required of members of the American Management Association ($50 of non-members). Advance registration information is available from Clapp & Poliak, Inc., Dept. FP, 341 Madison Ave., New York 17, N. Y. This list of exhibitors is as accurate as it is possible to prepare at press time. For last minute changes, the reader should contact Clapp & Poliak.

Booth	Exhibitor	Product*
688	General Packaging Equip. Co.	I
1075	Geveke & Company	C, D
1289	Gilbert Plastics Inc.	I
405	Gisholt Machine Co.	C, D
1134	Glassine & Greaseproof Mfrs. Association	A
207	The Globe Company	I
641	Globe Heat-Seal, Inc.	C, D
515	Glo-Brite Products, Inc.	I
921	Goodyear Tire & Rubber Co.	A
1253	Gordon Cartons, Inc.	A
1144	Adolph Gottscho, Inc.	D
1189	Gravure Cylinder Corp.	G
743	Graymills Corporation	G
653	Greenwood Packaging Supply Company	I
1250	B. F. Gump Company	B, C
660	The C. P. Hall Company of Illinois	I
1257	Frank Hamachek Machine Company	I
791	Hampton Mfg. Co.	A, B, D, E
835	Hankins Container Co.	A
1241	Harkin Affiliates, Inc.	A
1167	Hayssen Mfg. Co.	D
825	Hazel-Atlas Glass Co.	A
913	H. H. Heinrich Co.	I
833	High Production Mach. Co.	I
676	Hilker Products Corp.	C
984	Hinde & Dauch Paper Co.	A
326	Hi-Speed Checkweigher Company, Inc.	B, C
734	Hobbs Manufacturing Co.	I
744	Alfred Hofmann & Co.	C, D
636	Allen Hollander Co.	D
1254	Hope Machine Company	C
1150	Horix Mfg. Co.	C
1088	Hudson Sharp Mach. Co.	D
745	I. D. Company	A
511	Ideal Stencil Mach. Co.	D, F
323	Imco Container Corp.	I
1153	Inland Container Corp.	A
1271	Inland Wire Prod. Co.	B, E
760	Intaglio Service Corp.	G
1014	Interchemical Corp., Printing Ink Div.	D
1068	The International Paper Box Machine Co.	I
1053	International Paper Co.	A
1267	International Staple & Machine Company	E
875	Island Equipment Corp.	B
519	The Ivers-Lee Company	C
1172	Jiffy Mfg. Co.	A
1071	R. A. Jones and Co.	E
1234	Jones & Laughlin Corp.	A
121	Kahlenberg Globe Equipment Company	C
1034	Kalamazoo Vegetable Parchment Company	A
733	Paul L. Karstom Co.	B
642	Kartridg-Pak Mach. Co.	C
644	Keyes Fibre Sales Corp.	I
731	Kidder Press Co. Inc.	G
1213	Karl Kiefer Mach. Co.	C
1122	Kimberly-Clark Corp.	E
1026	Kimble Glass Company, Subs., Owens-Illinois	I
1022	Kingsbury & Davis Machine Company	E
616	Kleen-Stik Products	I
894	Koppers Company, Inc.	A
609	Frederick A. Krause Associates, Inc.	A
517	The Lakso Co., Inc.	C
966	Lanzit Corrugated Box Company, Inc.	I
1184	Lassiter Corporation	A
1272	Lectromatic Devices Inc.	I
1237	Leiman Brothers, Inc.	B
614	Le Page's, Incorporated	I
1076	Lynch Corporation	D, E
1225	Machine O'Matic, Inc.	G
721	Manhattan Paste & Glue Company, Incorporated	D
1044	Marathon Corporation	A, D
105	Mark' Andy, Inc.	D
1160	Markem Machine Co.	F
124	Marsh Stencil Machine Co.	D
101	Massachusetts Plastic Corp.	A
1295	McLaurin-Jones Co.	A
109	Melrose Packaging	A
418	Mercury Heat Sealing Equipment Co.	B, C, D
763	Merrill Machinery Sales Company	I
1264	Meyer-Clement, Inc.	I

*Equipment and supplies made by the exhibiting firms are designated by letters as follows:

A—Containers-Closures-Tapes, made from glass, wood, metal, plastic, paper, fiber, cloth, film, parchment, etc.

B—Materials Handling as conveyors, scales, strapping, vibrators, counters, fork trucks, drives, skids, pallets, unscramblers, pumps, lubrication, etc.

C—Filling-Sealing equipment including closers, sewers, fabricators, container washers, valve bag packers, etc.

D—Wrapping-Labeling equipment and supplies including dispensers, inks, adhesives, etc.

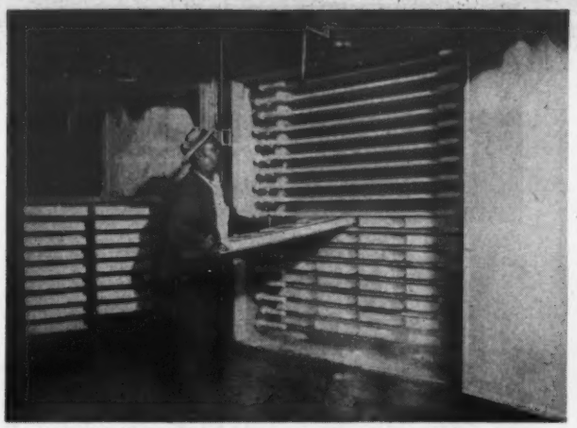
E—Casing equipment including stitchers, liners, cushions, staples, bundle tying, etc.

F—Coding and Marking machines

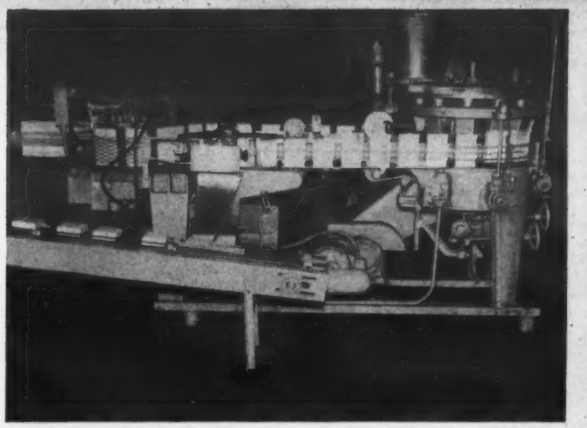
G—Presses and attachments for printing, also related equipment for packaging suppliers

H—Other Equipment and Supplies

I—Other exhibitors and those not classified at press time

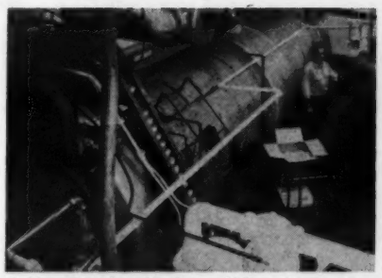


The Articold Package Freezer is extremely compact and efficient, freezes faster than blast tunnels at greatly reduced cost.



FMC Mara-Pak Carton Filler—automatic filler for free-flowing granular products in end-opening cartons. Fills up to 250 cartons per minute.

Famous *fmc* filling and freezing equipment cuts costs, speeds output of premium quality frozen foods



Uniform fast-freezing (up to 300 cpm) captures natural fresh flavors in the FMC Continuous Round Shell Can Freezer.

FMC — M&S Plunger Fillers set new standards for high speed, high accuracy filling and product versatility.

There are high speed, fully automatic FMC fillers for filling consumer and institutional size top-opening cartons.

These and other highly specialized FMC machines have literally shaped the profit-building production methods of leading frozen food plants everywhere. This FMC equipment includes several basic models of high capacity fillers for all types of containers; can freezers to meet the ever-increasing popular demand for a variety of frozen canned foods; package freezers for quick, even freezing at extremely low cost.

Continuous, automatic operation of FMC Carton Fillers is maintained at a peak level of efficiency...keyed to present day demands for highest productive food handling methods with reduced manpower requirements. These amazing fillers exemplify modern practices of *Automation* with their precision functions of opening, filling and closing cartons uniformly and at high speeds. When *you* plan, you can't plan better than with FMC...your "Key to Frozen Food Equipment."

Write for full information, or call your nearest FMC representative

FOOD MACHINERY AND CHEMICAL CORPORATION

Canning Machinery Division

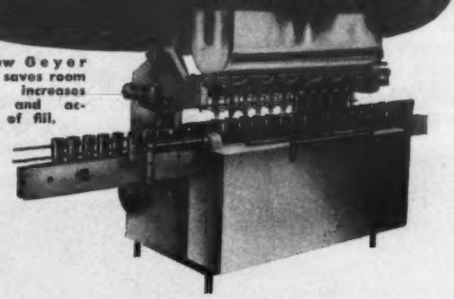
General Sales Offices:

WESTERN: SAN JOSE, CALIFORNIA **EASTERN: HOOPESTON, ILLINOIS**

When inquiring check FP 2363 on handy form, pgs. 2-3

GET MORE ACCURATE FILLING

ELIMINATE WASTE . . . INCREASE FILLING SPEED



The new Geyer design saves room space, increases speed and accuracy of fill.

With This New Geyer Straight Line Filler

This practical filling machine fills semi-liquid and semi-solid products . . . offers these outstanding advantages:

- fills as many as 300 glass, plastic and metal containers a minute.
- provides greater accuracy of fill since air operated valves cut off instantaneously. Valves themselves are completely air free.
- no container, no fill feature. Valves operate only when containers are at the filling station, eliminating waste.
- eliminates foaming on jellies and similar products.
- cleans easily. Product and container changes can be made quickly.

There are many other advantages you'll be interested in. Get full details on this and our other models and let us bid on your job.

THE FILLER MACHINE CO., INC.

Philmont Club Station, Pa. Phone Chapel Hill 0990

New York • Boston • Chicago • Dallas • San Francisco

When inquiring check FP 2364 on handy form, pgs. 2-3

Handiest Locations in PITTSBURGH

Hotel Pittsburgher

PITTSBURGH, PA.

Diamond Street below Grant

Right in the heart of the Golden Triangle—Hotel Pittsburgher

400 outside rooms with bath. Large-screen television and radio at no extra charge in every room. Air conditioning. Two restaurants. *ATlantic 1-6970*

Hotel Pittsburgher MOTEL

Opposite Greater Pittsburgh Airport on Airport Parkway west. 56 air-conditioned rooms with large-screen television at no extra charge, tile bath, private phone. *AMherst 4-5152*

a Knott Hotel

JOSEPH F. DUDDY, GEN. MGR.

Cut Costs with SEALTITE

- Delivers a well settled, nicely squared bag at top, bottom and sides
- Pre-scored, double fold, uniformly glued seal keeps product in and dirt out
- Uses any standard make of gusseted bag — no royalties
- Seal readily opened, yet tamper-proof
- Seals 30 to 50 bags per minute
- Users report costs reduced up to $500.00 per month per machine

Write for complete information

CONSOLIDATED PACKAGING MACHINERY CORP.

BUFFALO 13, N. Y.

When inquiring check FP 2365 on handy form, pgs. 2-3

Booth	Exhibitor	Product*
711	Mid-States Gummed Paper Co.	B
1013	Miller Wrapping & Sealing Machine Co.	C
935	Milprint, Incorporated	A
976	Minnesota Mining & Mfg. Co.	A, B, D, G
914	Modern Packaging	I
669	The Monarch Marking System Company	I
905	Monsanto Chemical Co.	A
537	Kenneth J. Moore & Co.	D
727	Mosstype Corporation	D
1180	MRM Company, Inc.	C, D
1236	Geo. F. Motter's Sons	G
135	The Multistamp Co.	D, F
1233	Mystik Adhesive Products	A, D
714	Nashua Corp.	A, D, E
232	Nasko Machinery Corp.	I
950	National Adhesives Div., National Starch Products	D
737	National Bundle Tyer Co.	D
890	National Can Corp.	A
879	National Container Corp.	A
839	National Equipment Corp.	B, C, E
650	National Laboratories & Manufacturing Corp.	G
1117	National Metal Edge Box Co.	A
958	National Paper Box Mfrs. Association	A
1241	National Spangle Co.	I
738	National Wooden Box Assn.	A
954	New Jersey Machine Corp.	D, E, F
975	Olin Film Div., Ecusta Paper Corp.	A
876	Oliver Machinery Co.	D
1249	Oneida Paper Products	A
1179	Owens-Corning Fiberglas Corporation	I
1026	Owens-Illinois Glass Co.	A
408	Package Design Council	I
1105	Package Machinery Co.	C, D
1006	Packaging Industries Limited, Inc.	C
1036	Packaging Parade	I
401	Packer Mfg. Co.	I
613	Packing & Shipping	I
1149	Pack-Rite Machines	C
1135	Paisley Products, Inc.	D
336	Pak-Rapid, Incorporated	C
432	Paper Converting Mach. Co.	G
1258	Penn Tape Savers	C
1062	Permacel Tape Corp.	D
402	Perry Industries Inc.	I
1126	Peters Machinery Co.	C, E, G
626	The Pfaudler Co.	C
429	Pharmaceutical & Chemical Industry Supply	C, D
1291	Phoenix Industries, Inc.	A
415	Phoenix Steel Container Co.	A
633	Pitney-Bowes, Inc.	B
779	Plastic Container Corp.	I
1239	Plastic Packaging Corp.	A
202	Plastics World	I
884	Plastomatic Corporation	A
1040	Plax Corporation	A
1121	Pneumatic Scale Corporation, Ltd.	A, C, D, E
1084	The Poly-Seal Corp.	A
1226	Popper & Sons, Inc.	C, G
953	Post Machinery Co.	I
859	Potdevin Machine Co.	D, F
767	Printing Machinery Co.	G
659	Pyroxylin Products, Inc.	I
417	Quatrum Corporation	A
1231	Queen City Tulatex Corp.	E
1002	F. B. Redington Co.	C, D, E
627	Reeves Pulley Co.	B
409	Resina Automatic Machinery Co., Inc.	C
925	Reynolds Metals Co.	A
995	Reynolds Metals Company, Plastics Div.	A
424	Rheem Mfg. Co.	A
1268	J. A. Richards Company	I
1106	Riegel Paper Corp.	A
771	Rossotti Lithograph Corp.	D
788	Roto Wrap Div., Conapac Machine Company	C, D, G
661	Rotogravure Packaging Inc.	I
333	Scale Specialties & Systems, Inc.	I
826	Scandia Mfg. Co.	D
1276	Schooler Mfg. Co.	I
1275	Schroeder Machines Corp.	E
1157	Seal-Spout Corporation	A
783	Seamless Rubber Co.	D
990	Sherman Paper Products Corporation	A
514	Shipping Management	I
785	The Simco Co.	C, G, H
1013	Simplex Packaging Machinery, Incorporated	C
623	Sinclair & Valentine Co.	D
618	H. P. Smith Paper Co.	D
406	Socony Vacuum Oil Co.	I
787	Southern California Plastic Company	A
123	Speedry Products, Inc.	G
1025	Standard-Knapp Div., Emhart Mfg. Company	E
865	Standard Packaging Corp.	A
1175	Stanford Eng. Co.	I
1188	E. G. Staude Mfg. Co.	I
1176	Stein, Hall & Co.	D
666	Sterling Seal Company	I
1013	Stokes & Smith Co., Subs. Food Machinery & Chemical Corporation	C, D, E
1218	Sun Chemical Corp.	D
316	Supermatic Packaging Corp.	I
739	Swift & Company, Adhesive Products Dept.	D
306	M. Swift & Sons, Inc.	G
906	Sylvania Division, American Viscose Corp.	A
895	Technical Tape Corp.	I
136	Tee-Pak, Inc.	A, G
1198	Telesonic Packing Corp.	C
692	Thermel, Incorporated	I
417	J. C. Tobin Company	I
782	Toledo Scale Co.	B
1143	Tompkins' Label Service	D
1217	The Trescott Co.	B, C
1125	Triangle Package Mach. Co.	C
622	Triplex Industries, Inc.	I
512	Tri-State Plastic Molding Company	A
427	Unette Corporation	A, B
821	Union Bag & Paper Corp.	A
419	Union Paste Company	D
1065	Union Steel Products Co.	B

Booth	Exhibitor	Product*
236	United Can Co. Inc.	A
110	U. S. Armed Forces	I
1154	United States Automatic Box Machinery Co., Inc.	C
1163	U. S. Bottlers Mach. Co.	B, C
436	U. S. Engineering Co.	B, C
118	United States Plywood Corp.	I
813	United States Printing & Lithograph Co., A, D,	H
210	United States Rubber Co., Collapsible Container Div.	I
208	United States Rubber Co., Royalite Div.	I
1280	Upson Company	B
757	Vac-Tie Fasteners, Inc.	A, C
1288	Vacuum Forming Corp.	H
533	The Varigraph Co., Inc.	G
332	B. Verner & Co., Inc.	F
755	Vertrod Corporation	C, G
939	The Visking Corp.	A
1229	Vulcan Electric Co.	C
324	Walton Laboratories	G
139	Warner Electric Brake & Clutch Company	G
219	S. D. Warren Co.	A
710	H. G. Weber & Co.	E
1245	Weber Label and Marking Systems, Div., Weber Addressing Machine Company	D, F
1183	Weigh Right Automatic Scale Company	C
619	Weinman Brothers, Inc.	A
302	Western Printing Co.	I
694	West Instrument Corp.	G, H
119	Wilco Company	H
654	Williamson Adhesives, Inc.	D
753	Frank W. Winne & Son, Inc.	D, H
133	Wolverine Paper Converting Machinery Corp.	D
749	Wood Conversion Co.	E
871	The Woodman Co, Inc.	C
1140	Wrap-Ade Machine Co., Inc.	D
750	Wrap-King Corp.	C
814	Wright Machinery Co.	B
671	York Tape Printers Inc.	D

Fancy ice cream, sherbet servings put up in own plastic molds

Clear vinyl plastic film molds for ice cream and sherbet will bring fancy molded desserts within easy reach of the housewife. Packages containing four molds each are being retailed by Borden's for less than 50c on most markets.

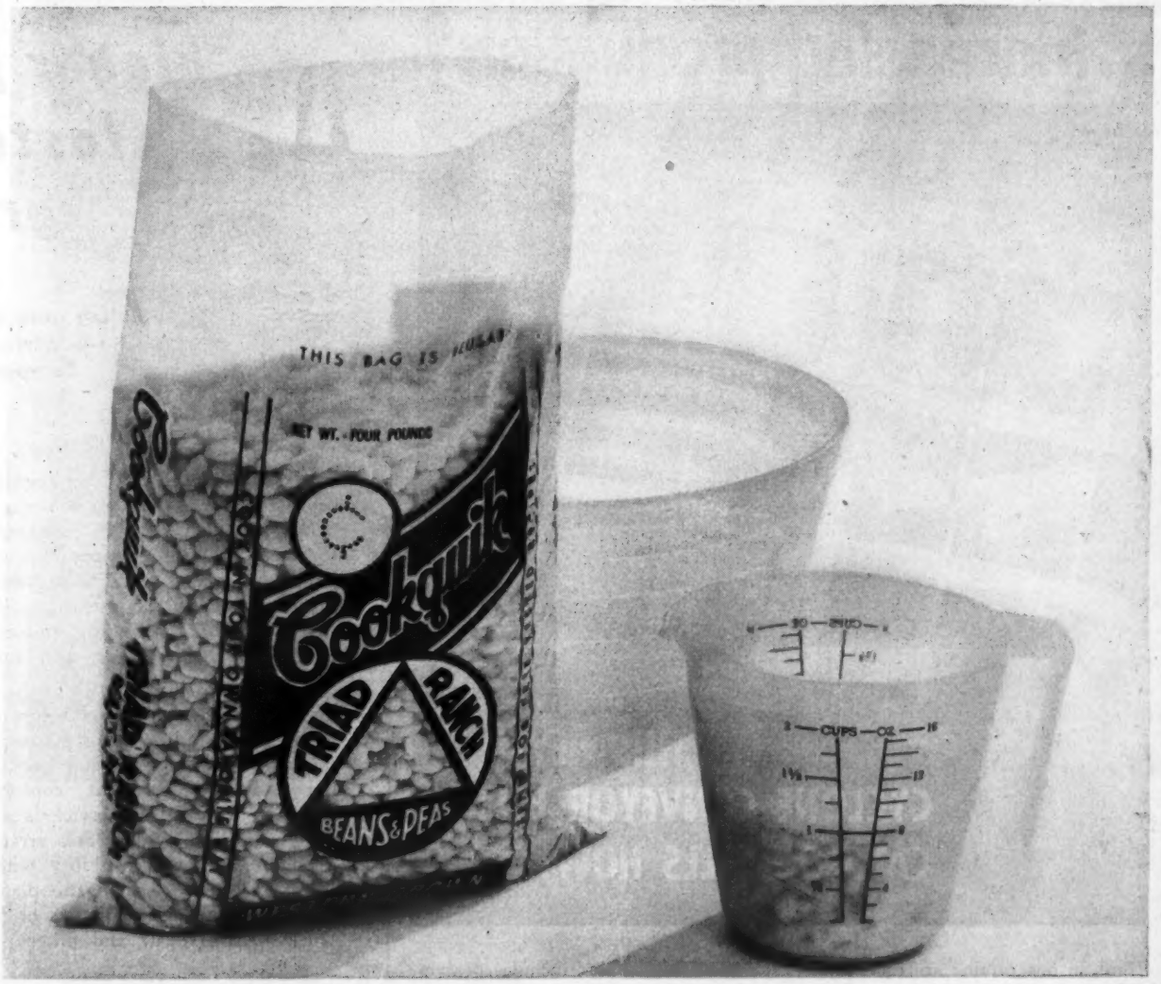
New dessert is sold right in mold, supported within circular cardboard collar which has tab-type lid at open end. Product is easily handled and can be stored without danger of damage to molded form. Serving is accomplished by removing cardboard lid and pushing dessert out of mold from back.

Present fillers at Borden's have been modified with special attachment for handling this product.

(Caps for the molds are a development of Dixie Cup Co., Dept. FP, Easton, Pa. . . . or for more information check FP 2366, pages 2 and 3.)

(Attachment for fillers was developed by Anderson Brothers Manufacturing Co., Dept. FP, 1907 Kishwaukee St., Rockford, Ill. . . . or for more information check FP 2367, pages 2 and 3.)

HERE'S PROOF it pays to package in film made of BAKELITE Polyethylene



Packaging designed and supplied by **Milprint, Inc.**, Milwaukee, Wisc.

"...creates an impulse to buy"

"The polyethylene bag has *many* advantages." That's the report of Mr. Charles Carbone, one of the top officials of the Trinidad Bean & Elevator Company, Denver, Colorado.

Two years ago the company began looking for the ideal bag for four-pound packages of beans. They wanted it transparent. They wanted it attractively printed. And it had to be strong enough to safely carry four pounds of beans . . . and economical as well.

Bags made of film produced from BAKELITE Brand Polyethylene were the answer. Says Mr. Carbone, "Our increase in the four-pound pack has been constant since we started using the polyethylene bag, and it continues to grow. The bags create an impulse on the part of the housewife to buy. And, when the beans are gone she can and does use the polyethylene bag as a refrigerator container. It works wonderfully."

Whether you market foods, already packaged, or do your own pre-packaging, don't miss out on the extra advantages that are yours when you use packaging made of BAKELITE Polyethylene. See your packaging supplier for the whole story.

SPECIFY FILM MADE OF

BAKELITE BRAND
Polyethylene Plastic

BAKELITE COMPANY, *A Division of Union Carbide and Carbon Corporation* UCC 30 East 42nd Street, New York 17, N. Y.
The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC

When inquiring check FP 2368 on handy form, pgs. 2-3

Interested in cutting costs ...increasing production?

Here, in one catalog are cost-saving facts on efficient, processing operations employing Cyclone metal conveyor belts—showing their advantages over costly manual handling and over belts made of other materials.

Cyclone Conveyor Belt Catalog #5 contains the up-to-date story on the entire line of dependable, Cyclone Belts – which constitutes the widest selection of metal belts in carbon, alloy and stainless steels.

This big catalog includes descriptions, photographs and specifications on *all* the types of Cyclone Belts available. Application pictures show how and where Cyclone Belts are saving time and money in many processing and product handling operations. Send the coupon for your catalog.

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL
Waukegan, Ill.
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

MAIL THIS COUPON

USS CYCLONE
METAL
CONVEYOR BELTS
SPIRAL WOVEN
FLAT WIRE · FLEX-GRID

Cyclone Fence
Dept. K-45, Waukegan, Illinois

Gentlemen:
Please send me your big, illustrated Catalog #5. No charge or obligation.

Name.....
Company.....
Address.....
City.....State.....

UNITED STATES STEEL

When inquiring check FP 2369 on handy form, pgs. 2-3

bigger payloads! faster delivery! greater safety!

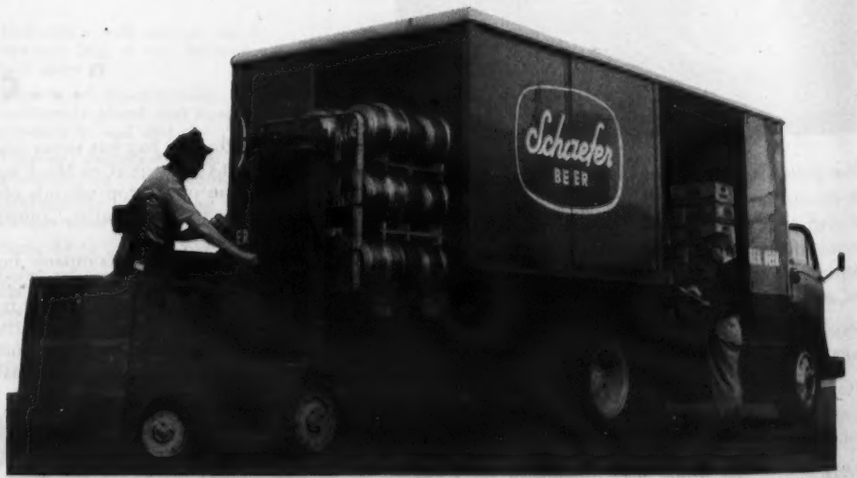
Sliding door bodies, extra-capacity trucks tie-in perfectly with Schaefer Brewing Company's palletized system

Trucks tailored to its exact requirements have brought Schaefer Brewing Company, Brooklyn, N. Y., maximum performance in low cost operation, fast delivery, less maintenance, and greater load protection. Also, all operations involved in truck loading, unloading, and deliveries have been made easier and safer for workers.

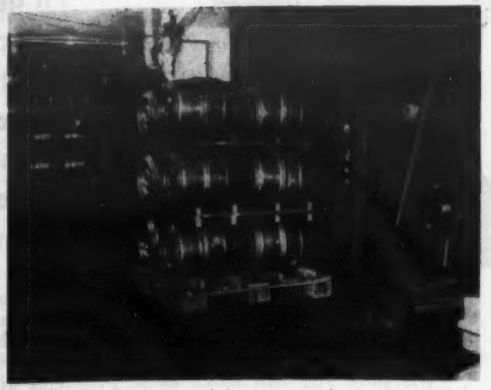
Pictured here is one of a future fleet of trucks that handles up to 8 tons of beer in pallet loads of cases and kegs. One of the body features that contribute so much to trouble-free service is a special design of sliding door. This arrangement provides greater accessibility with much lower maintenance than the piano-hinge bi-fold doors used on bodies of previous trucks. Also, repair and other problems are avoided and accidents greatly reduced. Because of the tremendous weight of the double doors, the hinges were damaged frequently. Wide arc of each door in swinging open made it hard to use in close quarters, especially in parking diagonally. However, in changing over to a sliding type door a number of requirements in body construction had to be observed. Strong supports were necessary to prevent shifting that would bind the doors.

Doors, mountings, and tracks had to be developed that would avoid rattles, ice binding, and jamming from broken glass. An overhead mount on roller bearings and completely open bottom tracks solved these problems.

Body on these new route trucks is the



Sliding doors of special body speed loading. Rugged truck chassis has excess capacity for handling 12,300 or 16,300 lb cargo of beer in kegs and cases. Cab-over-engine saves garage space, improves visibility for greater safety



Automatically palletized kegs are picked up by fork truck for quick loading into waiting trucks

standard 8′ width. Top of roof is slightly more than 10′ above ground. Overall length is just under 24′. Body is 17′ long in contrast to the 14′ length of the conventional bodies in other units of the Schaefer fleet.

Each of eight compartments in the body is 50″ long and approximately 42″ wide. This allows ample clearance for each of the 36″ x 44″ 4-way entry non-reversible pallets to fit in its own compartment. There are four compartments forward of the wheelhouse and two above the wheelhouse and two behind the rear wheels. In loading, two pallets are placed in the foremost compartments (against front bulkhead of body) while two are placed in the two rear compartments (behind wheelhouse). This arrangement leaves two empty compartments over the wheelbase and two just ahead of the wheelhouse. In the one empty compartment on the traffic side, an empty pallet is positioned before the truck leaves on its run. This is used for stacking and storing returnable empties collected on the run. The empty compartment on the curb side is the working area for the driver and the helper on the truck. From this compartment access can be gained to all other compartments except the two rear ones because there are no solid, stationary dividers in the body. The two rear compartments are accessible through the sliding doors and well suited to kegs or split loads. This arrangement assures a great degree of safety for driver and helper as men are not generally required to work traffic side.

To provide load stabilization a 10″ movable board (¾″ plywood) was placed on each side of the wheelbase. This arrangement completely stabilizes pallets in the four rear compartments. Five stationary and one moveable (but not removable) posts are located along the longitudinal center line of the forward four compartments. These two stabilizing devices have completely eliminated

(*Continued on page* 55)

"We increased storage capacity one-third, cut car-unloading time by more than 50% with Clark Trucks," says JOSEPH PALESE, PLANT SUPERINTENDENT, SALERNO-MEGOWEN BISCUIT CO., CHICAGO

In this Salerno bakery, one of the world's largest, you find four Clark electric fork trucks and three Clark Powrworker hand trucks—unloading and storing raw materials and handling palletized cartons ready for shipment.

Practically all material received from local suppliers —bags of flour and sugar, drums of oil and shortening, other items in boxes, sacks, rolls—is loaded on pallets manufactured by Salerno, and furnished by them to suppliers. The busy Clarks take over at the receiving doors, and handle materials throughout the full production cycle. Benefits are substantial: a 33% increase in storage capacity and car-unloading time cut by well over 50 per cent.

"We are completely satisfied with our Clark machines, and have three more on order," says Mr. Palese.

These benefits can be yours—simply call your local Clark dealer, listed in the Yellow Pages of your phone book: a good man to help engineer a handling system to meet your needs.

CLARK EQUIPMENT

Industrial Truck Division
CLARK EQUIPMENT COMPANY
Battle Creek 15, Michigan

When inquiring check FP 2370 on handy form, pgs. 2-3

TOWMOTOR
THE ONE-MAN-GANG
FORK LIFT TRUCKS
at Columbia Malleable Castings Corporation

300% PRODUCTION INCREASE

. . . Overall Handling Costs Cut 60%

Job-Planned Towmotors now pour finished parts into hoppers using a Revolving Barrel Grab. Parts feed down to a weighing conveyor and are bagged mechanically for shipment. Manual filling was eliminated and output per man increased 300%. Overall, Towmotor cut handling costs 60%.

Towmotor equipment does wonders in every plant where handling is a problem. For more information write for Job Studies covering your industry, your competition. TOWMOTOR CORPORATION, Div. 4404, 1226 East 152nd Street, Cleveland 10, Ohio.

FOR FAST ACTION—See a Material Handling Specialist—your nearby Towmotor Representative. His factory training will show you the quickest way to attain maximum handling efficiency at minimum cost.

When inquiring check FP 2371 on handy form, pgs. 2-3

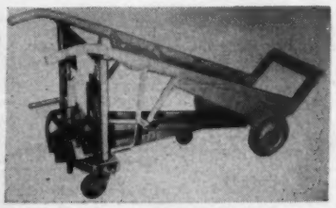
Hand trucks conveyed on in-floor dragline

Quickly locked onto 3-wheel carrier by foot latch

Uses: Enables two-wheel hand trucks to be carried on in-floor dragline systems.

Features: Cam-release permits quick disengagement of carrier from line.

Description: Carrier locks two-wheel hand truck and any load, such as a drum, in position so that they are held securely. Right hand leg of truck is locked to carrier by a foot operated latch.



Flip of pin engages hand truck to dragline carrier

Carrier has three rubber-tired swivel casters which have sealed bearings.

(Carrier is built by Lewis-Shepard Products, Inc., Dept. FP, 193 Walnut St., Watertown 72, Mass. . . . or check FP 2372.)

Permanent magnet pulleys for foods and feeds

Features of magnetic pulleys, incorporating "radial pole design" and typical applications, are pictured and described in 8-page bulletin. Design is said to create "horizontal line contact" of ferrous metals and materials with magnetic poles instead of "point of contact". Bulletin includes diagrams, performance data, specifications, and size selection guide.

Permanent magnet pulley Bulletin No. PY-260 is issued by The Homer Mfg. Co., Inc., Dept. 100-FP, 142 E. Pearl Ave., Lima, Ohio. . . . or check FP 2373, pages 2 and 3.

HERE'S PROOF

You'll get Better Service ...Longer Life with Rex Z-Metal Drive and Conveyor Chains

What's your problem . . . corrosion, abrasion, heavy pounding? What's causing your chain drives and conveyors to fail prematurely? This informative booklet has your answer . . . shows you how you can solve those problems with Rex® Z-Metal Chains. It proves why Z-Metal resists abrasion . . . corrosion . . . takes heavy pounding . . . with plenty of actual case histories to back up our story.

Why not send for your copy today—ask for Bulletin No. 53-56 . . . see how you can get far better service *at a saving.*

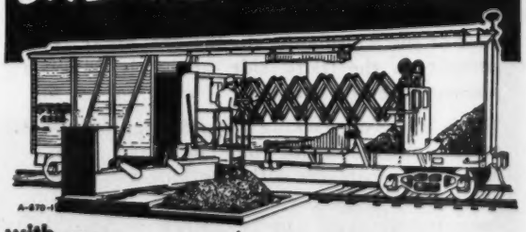
4699 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT COMPANY

District Sales Offices and Distributors in all principal cities.

When inquiring check FP 2374 on handy form, pgs. 2-3

UNLOAD BOX CARS IN ONE-HALF MAN HOUR



with

S-A BOX CAR UNLOADERS

This new Box-Car Unloader, with its Automatic power scoop, will unload almost any pulverized, granular or small lump material, normally transported in box cars faster, easier and safer. Eliminates operator exposure to dust and accidents. Original and operating costs and the space required are much less than for Rotary or Tilting car dumps.

WRITE TODAY FOR COMPLETE INFORMATION!

STANDARD PRODUCTS DIVISION
STEPHEN S-ADAMSON MFG. CO.
17 Ridgeway Ave. Aurora, Illinois

When inquiring check FP 2375 on handy form, pgs. 2-3

(Continued from page 53)

breakage experienced before they were incorporated into the body.

Increased safety is provided by the low floor level which permits effortless entry and exit. Aluminum plate with clover-leaf non-skid design is used for the floor and steps. Cab is placed over engine to reduce overall length and permits using larger, longer body. Trucks park in same garage space required for conventional trucks with 14′ body. Design and position of cab also afford excellent road visibility. Additional comfort features are heater, defroster, full length sun visor.

New trucks to be put in service are same make and size as present fleet but much lighter through use of aluminum. They withstand hard service regularly required and provide capacity for extra loads that must often be carried. These units have 165″ wheelbase, a 130 hp Mustang engine of 340 cu in displacement, and a 14″ heavy duty clutch. A 4-speed direct transmission provides great flexibility and fine hill climbing performance. Front axle capacity is 8000 lb; rear axle 20,000 lb. The special drop frame has underslung springs. Gross weight is 25,000 lb—full load 12,300 lb for 6 ton load. For 8 ton load weights are 29,000 and 16,300 respectively.

Research responsible for this development in brewery delivery trucks was a cooperative effort of A. R. Jones, Schaefer traffic manager; A. P. Amato, Schaefer materials handling engineer; Bruce Hackstaff, Schaefer plant and production director. Also participating in the project were George Arthur of J. J. Casale Corp. furnishing leased service to Schaefer, Thompson Trailer Co., body builders, and White Motor Co., transportation engineers.

(Trucks described are model 3000 built by White Motor Company, Dept. FP, 842 East 79th St., Cleveland 1, Ohio . . . . or for more information check FP 2376 on handy form, pages 2 and 3.)

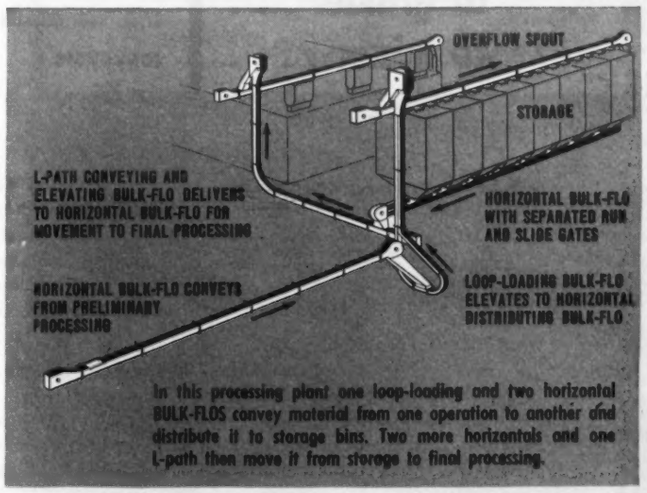
Wash a truck in just 12 minutes? Folder tells how it's done

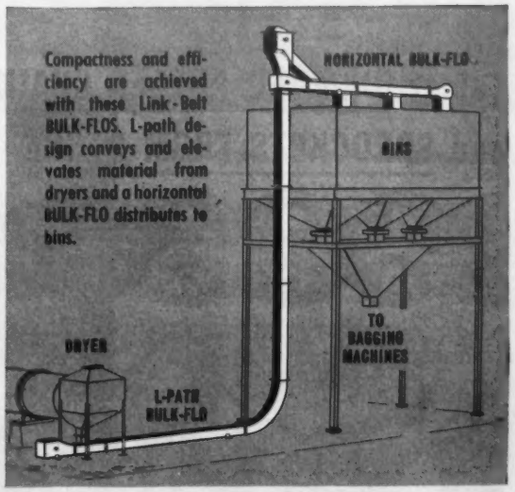
How a large truck or trailer can be thoroughly washed in 12 minutes is explained in a 12-page folder that features a series of action photos to show the easy step-by-step procedure. These views picture wetting down, applying detergent foam, brushing surfaces where dirt is heavy, pressure rinsing and drying to clean, streak-free finish.

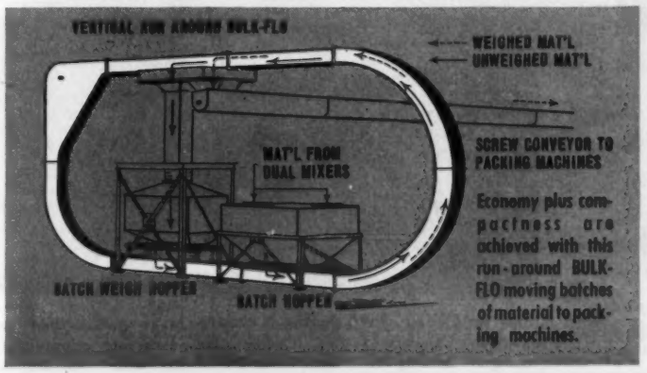
Folder also tells how pressure foam unit operates and how foamy lather is made by mixing either of two compounds with water.

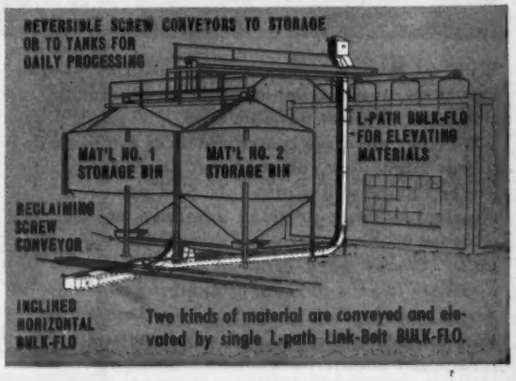
Folder "Ever See a Truck Washed Faster Than This?" is issued by Oakite Products, Inc., Dept. FP, 19 Rector St., New York 6, N. Y. When inquiring specify FP 2377, pages 2 and 3.

Here's how BULK-FLO units can feed-convey-elevate your materials


OVERFLOW SPOUT
STORAGE
L-PATH CONVEYING AND ELEVATING BULK-FLO DELIVERS TO HORIZONTAL BULK-FLO FOR MOVEMENT TO FINAL PROCESSING
HORIZONTAL BULK-FLO WITH SEPARATED RUN AND SLIDE GATES
HORIZONTAL BULK-FLO CONVEYS FROM PRELIMINARY PROCESSING
LOOP-LOADING BULK-FLO ELEVATES TO HORIZONTAL DISTRIBUTING BULK-FLO
In this processing plant one loop-loading and two horizontal BULK-FLOS convey material from one operation to another and distribute it to storage bins. Two more horizontals and one L-path then move it from storage to final processing.


Compactness and efficiency are achieved with these Link-Belt BULK-FLOS. L-path design conveys and elevates material from dryers and a horizontal BULK-FLO distributes to bins.
HORIZONTAL BULK-FLO
BINS
TO BAGGING MACHINES
DRYER
L-PATH BULK-FLO


VERTICAL RUN AROUND BULK-FLO
WEIGHED MAT'L
UNWEIGHED MAT'L
MAT'L FROM DUAL MIXERS
SCREW CONVEYOR TO PACKING MACHINES
Economy plus compactness are achieved with this run-around BULK-FLO moving batches of material to packing machines.
BATCH WEIGH HOPPER
BATCH HOPPER


REVERSIBLE SCREW CONVEYORS TO STORAGE OR TO TANKS FOR DAILY PROCESSING
L-PATH BULK-FLO FOR ELEVATING MATERIALS
MAT'L NO. 1 STORAGE BIN
MAT'L NO. 2 STORAGE BIN
RECLAIMING SCREW CONVEYOR
INCLINED HORIZONTAL BULK-FLO
Two kinds of material are conveyed and elevated by single L-path Link-Belt BULK-FLO.

Single, compact, enclosed assembly . . . operates fully or partially loaded

SHOWN above are four of many handling variations possible with Link-Belt BULK-FLO. This single assembly moves materials along horizontal, vertical and inclined paths . . . combines feeding, conveying, elevating. Flexible, compact and sanitary—BULK-FLO often replaces several handling units—in less space . . . at lower cost. Get complete information from your nearby Link-Belt office or send coupon for your copy of Book 2475 today.

FULL OR PARTIALLY LOADED—Link-Belt BULK-FLO assures positive, gentle movement of material. Self-clearing through intermediate runs, it prevents contamination.

LINK-BELT

BULK-FLO FEEDERS • CONVEYORS • ELEVATORS

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants and Sales Offices in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 13,670

LINK-BELT COMPANY
307 N. Michigan Ave.
Chicago 1, Ill.
(Or your nearest Link-Belt office)

Please send me a copy of your 28-page BULK-FLO Book 2475.

Name .....
Firm .....
Address .....
City ..... Zone .... State .....

When inquiring check FP 2378 on handy form, pgs. 2-3

FOR DRIVES LIKE THESE . . .

Select DIAMOND ROLLER CHAINS and SPROCKETS FROM STOCK

With so wide a range of *Stock* Roller Chains and Sprockets now available, drive requirements can be met in the shortest possible time.

Whether the drive center distances are short or long; speeds high, low, or medium; Diamond Roller Chains will do the job. And power transfer, in large or small amounts, presents no problem. *For many years Diamond Roller Chains have been preloaded after assembly for the purpose of bringing pin-bushing seating into stabilized relationship prior to field installation.* No break-in period is required—minimum maintenance results. New Catalog 754 covering *Stock* Chains and Sprockets will help you to the correct selection.

Finished-Bore Sprockets complete with keyways and setscrews.

Taper-Lock Sprockets with replaceable bushings to meet wide range of bores.

Labeled and Packaged 10' Lengths of Chain. Reels for 50' and over.

Write for this 64-page Catalog 754 today. Complete information, helpful illustrations and usable tables on how to select Stock Roller Chains and Sprockets.

DIAMOND CHAIN COMPANY, Inc.
Dept. 410, 402 Kentucky Avenue, Indianapolis 7, Ind.
Offices and Distributors in All Principal Cities

Please refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

When inquiring check FP 2379 on handy form, pgs. 2-3

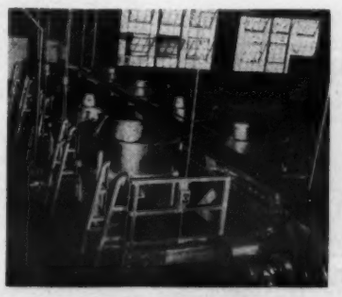
kettle . . . . . to grinder . . . to mixer . . . .

— a quick, smooth trip via oscillating conveyors

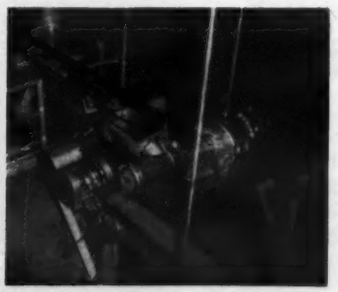
Used in Morgan Packing Company chili processing line they provide continuous flow with surge-proof action

Gentle action oscillating conveyors adapt easily to a wide range of handling operations. They are particularly effective in bringing materials to processing areas and in moving them from one operation to another. Views presented here show how they contribute to chili and beef stew production at Morgan Packing Company, Austin, Ind.—making it an almost entirely automatic operation.

More than 10,000 lb of meat is transferred to grinding and mixing stations every hour. Meat is cooked in eight steam kettles until a high concentrate of broth is obtained. Broth is drained and meat



Meat for making chili is cooked in these 325 gal capacity kettles. Oscillating conveyor is only 12" wide, providing compact installation between rows.



Meat is discharged from oscillating conveyor into grinder. Reduced to uniform size it falls to another oscillating conveyor and moves in continuous flow.

Discharge chutes at end of conveyor leading from grinder allow meat to tumble into mixing tank below. Discharge mechanisms are easily installed on-the-job

NO MATTER HOW YOU BUY

INDUSTRIAL WIRE CLOTH

—IN BULK from stock or SPECIAL FABRICATIONS—

You can rely on

Cambridge

COMPLETE LINE—Cambridge stocks include a wide variety of specifications from the finest to the coarsest mesh in any metal or alloy.

QUALITY—Accurate mesh count and uniform mesh size are assured by individual loom operation and careful inspection just before shipment.

PROMPT SERVICE—You get immediate delivery on the most frequently used types of cloth. If your needs are not in stock, we'll schedule our looms to get your material to you without delay.

CAMBRIDGE ENGINEERS, both in the home office and in the field, are fully qualified to help you select the cloth to meet your needs, whether you order in bulk or special fabrications. In fabricating parts of any type . . . filter leaves, strainers, sizing screens . . . we'll work from your prints or draw up prints for your OK.

LET US QUOTE *on your next order for wire cloth. Call your Cambridge Field Engineer—he's listed under "Wire Cloth" in your classified telephone book.*

OR, WRITE DIRECT for FREE 80-page CATALOG and stock list giving full range of wire cloth available. Describes fabrication facilities and gives useful metallurgical data.

The Cambridge Wire Cloth Co.
Dept. H • Cambridge 4, Md.

WIRE CLOTH | METAL CONVEYOR BELTS | SPECIAL METAL FABRICATIONS

OFFICES IN PRINCIPAL INDUSTRIAL CITIES

When inquiring check FP 2380 on handy form, pgs. 2-3

lifted out onto conveyor, which is installed between the two rows of kettles. It is just 12" wide and 36' long. It has a metal trough mounted on resilient supports.

Trough is given an upward and forward oscillating motion by a positive action, constant stroke eccentric drive. Meat moves forward in continuous flow to grinder where it is reduced to uniform size.

Discharged from grinder, meat falls onto another oscillating conveyor 20' long which takes it to mixer where beans and other ingredients are added. Conveyors are high-sided, leakproof. Their features are of particular advantage where space is limited. They require an opening only slightly larger than size of trough. Volume of material is moved in continuous flow regardless of surges.

(Flexmount oscillating conveyors are built by Link-Belt Co., Dept. FP, 307 N. Michigan Ave., Chicago 1, Ill. . . . check FP 2381, pages 2 and 3.)

Automatic controls "shut the door" on atmospheric losses

Complete units easily installed for operation by treadle, photo-cell, pushbutton, or pull cord

Doors shown in this section of a large midwestern plant are opened and closed automatically at flick of a switch. This contributes to accurate control of humidity vital to efficient product protection.

Each sliding door has its own automatic opener

Controls are simple in design and installed without expensive alterations. They may be operated by photo-electric cell, treadle, pull cord, or pushbutton. Fully assembled units are compact and mounted on a base plate. Action is always smooth, positive, and prevents slamming. Provision is made for manual operation in case of power failure. Where door controls are to be installed in hazardous areas completely pneumatic operation eliminates electrical connections.

(Economatic door operators are built by National Pneumatic Co., Inc., Dept. FP, 125 Amory St., Boston 9, Mass. . . . check FP 2382, pages 2 and 3.)

A completely new and different

PAYLOADER®

TRACTOR SHOVEL

NEW MODEL HA

An efficient, more flexible bulk-material handling system

The first Model HA "PAYLOADER" tractor-shovel appeared 15 years ago, giving industry a new, flexible bulk-material handling system. Today, Model HA's are *the* bulk-handling system in thousands of plants.

Now comes the 1955 Model HA — a completely new design — with twice the digging power, lifting capacity and carrying capacity and 50 to 100% greater production capacity.

Whether or not you have older HA's — you should find out how this new HA can reduce your bulk material handling costs. Your "PAYLOADER" Distributor is ready to show you.

Outstanding features:

16⅔% more bucket capacity:
PAYLOAD capacity ..... 18 cu. ft.
Struck-load capacity ..... 14 cu. ft.

Powerful "break-out" digging action Upward rotation of the bucket combines with forward motion of machine in a powerful slicing action that gets full loads quickly, even from lumpy, sticky or heavy materials.

Bucket tip-back of 40 degrees when only 6 inches off the ground carries heaped loads *low* and *close* for maximum stability, balance and safety.

New standards of safety Boom arms and parts are mounted *low* and carry loads *low* and are always clear of the operator. Operator visibility is good at all times.

Advance-design hydraulic system includes: sealed, pressurized hydraulic tank — no breathing of dirt and grit into hydraulic fluid; hydraulic accumulator prevents pressure shocks — gives easier, safer control.

Torque-converter drive and full-reversing transmission with two speed ranges insures fast moves in either direction — easier operation and control — more production.

GAS OR DIESEL POWER OPTIONAL.

☐ Send me complete model HA information
☐ Send information on all seven "PAYLOADER" sizes
☐ Send name of my "PAYLOADER" Distributor

Name .....
Title .....
Company .....
Street or Box No. .....
City ..... State .....

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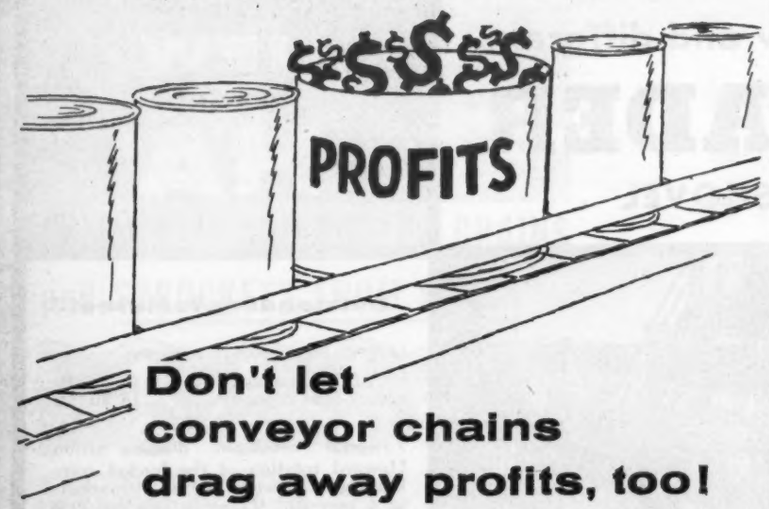
MANUFACTURED BY THE FRANK G. HOUGH CO. • LIBERTYVILLE, ILL.
SUBSIDIARY INTERNATIONAL HARVESTER COMPANY

When inquiring check FP 2383 on handy form, pgs. 2-3



Don't let conveyor chains drag away profits, too!

When conveyor chains become clogged with gummy bar soap lubricants, you're unnecessarily losing a sizable portion of your profits! Clogged conveyor chains cause increased power consumption and burn-outs, because of the excessive drag on conveyor motors. They cause product containers to become soiled and lose much of their sales appeal. MOST IMPORTANT, production lags when frequent shut-downs are necessary for "conveyor chain clean-up".

Now, however, those expensive production bottle-necks can be avoided. Oakite chemists have developed two specialized chain lubricants especially designed to keep conveyor chains properly lubricated *without excessive build-up.*

Oakite Composition No. 6—a jelly-like soap lubricant, designed for use in equipment that applies the solution as it is made, or applies a pre-mixed stock solution.

Oakite Composition No. 12—a sudsless, non-soap, liquid lubricant especially suitable for hard-water areas, or where acidic spoilage might reduce the efficiency of a soap-type lubricant.

Both of these specialized Oakite conveyor chain lubricants are effective and economical to use. They provide just the right "slip" between container and chain... help remove soil from fouled surfaces... keep conveyor chains consistently clean. Try an Oakite Conveyor Chain Lubricant on your own line—see for yourself their tremendous advantages and savings. Your local Oakite Technical Service Representative will gladly arrange for a demonstration. Call him today, or write Oakite Products, Inc., 27A Rector St., N. Y. 6, N. Y.

SPECIALIZED INDUSTRIAL CLEANING — OAKITE — MATERIALS METHODS SERVICE — SCIENCE

Technical Service Representatives in Principal Cities of U. S. and Canada

When inquiring check FP 2384 on handy form, pgs. 2-3

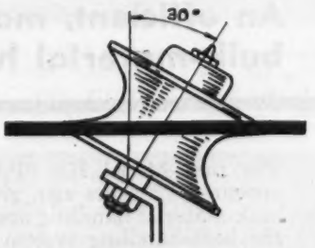
Hyperbolic principle applied to belt guide stops edge damage

A belting control mechanism that serves both as idler and as a guide operates on the hyperbolic principle. It is especially designed to adapt itself to the conditions of contact and speeds that cause rapid belt wear. It presents a smooth, yielding surface to the belt instead of a single point.

Guides are now in service in handling grain, sugar, fruit, and similar materials on conveyors ranging from 18 to 42" wide. Operating speeds are from 60 fpm in guiding steel band belting used in baking ovens to 450 fpm on grain handling belts.

Illustrations show how contact between belt edge and guide is increased. Because of these same features pressure on each square inch of belt edge is reduced. At the same time there is axial movement for following the natural oscillation of the belt.

Guide installed on 180° belt to arrest further edge wear



Guide presents long, yielding surface to belt edge instead of single striking point

Essential long line direct contact surface is preserved, but since this surface now revolves, friction is minimized and slippage between belt edge and guide is eliminated. In operating with this guide, belt oscillates as do all working belts. The guide oscillates with it.

CONVEYING ELEVATORS

IDEAL FOR HANDLING FRAGILE FOOD PRODUCTS

Manufactured to meet your exact requirements . . Completely flexible . . for almost any length of horizontal or vertical travel . . . and will discharge products at one or multiple points.

Combines best features of conveying and elevating fragile food products . . . gently . . easily . . and with highest sanitary standards!

Product is fed gently . . not scooped . . into pivoted stainless steel buckets which overlap at point of infeed to eliminate all "spillage" or "build-up" . . Pivoted stainless steel buckets discharge their contents gently and positively by completely inverting . . . an exclusive design feature.

MEYER MACHINE CO.

"Designers and Manufacturers of Conveying and Processing Machinery"

3528 FREDERICKSBURG RD. PErshing 45151

SAN ANTONIO, TEXAS

When inquiring check FP 2385 on handy form, pgs. 2-3

The "HAMMOND" Screw-Veyor

A screw operating within a tube. Conveys any free-flowing bulk material.

Dust-tight . . . Moisture-Proof . . . Noiseless . . . Inherently Superior for Combating Insect Infestation.

Easy to install and maintain. Always in alignment. Readily Accessible. Sturdy—Fireproof.

Standardized Uniformity permitting unit extensions. Removes the old disadvantages of distortion. Tube does not carry any structural load as is the case with "U" Shaped Box Conveyors.

Write for FORM M-600-2

STANDARD FEED END ASSEMBLY

STANDARD INTERMEDIATE ASSEMBLY

STANDARD DISCHARGE END ASSEMBLY

Screw-Veyor comes in standard feed end and discharge end assemblies, with any number of intermediate assemblies to form a conveying system of any length and to fit any feeding or discharge requirements. Investigate this outstanding development.

Screw Conveyor Corporation

701 HOFFMAN STREET • HAMMOND, INDIANA

WINONA, MISSISSIPPI — SANTA CLARA, CALIFORNIA

MANUFACTURERS OF HAMMOND PRODUCTS

TRADE MARK REG. U.S. PAT. OFFICE

When inquiring check FP 2386 on handy form, pgs. 2-3

This is accomplished without impairing function, guiding, or control of belt.

In installation, guide should be placed at a 30° angle to direction of belt travel. In other words the belt edge should first contact the lower flange of the guide and proceed along a direct line toward the upper flange.

Body of guide is machined all over. Standard models are cast iron, but guides are available in steel or other metals suitable for casting. Seals of labyrinth closure type prevent entrance of foreign material and retard escape of lubricant.

(Guidler control mechanism is built by Knapp Mills, Inc., Dept. FP, 23-15 Borden Ave., Long Island City, N. Y. . . . or for more information check FP 2387 on handy form, pages 2 and 3.)

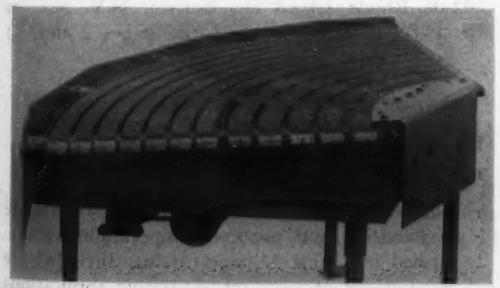
Perfect alignment maintained by 90-180° power turntable

Positive shaft and gear drive — accurately timed belt operation — belt widths to 34″

Uses: For conveying products-in-process as well as cartons and packages around 90 and 180° turns.

Features: Maintains perfect alignment constantly. Handles loads up to 100 lb at belt speeds up to 50 fpm. Small 1¼″ diameter nose rolls simplify transfer to and from other conveyors.

Description: Available in widths up to 34″. Belts are flat-flex wire (.072″), stainless for sanitary applications, plated for general use. Mesh, approximately ⅜″ at inside radius increases to ¾″ at outside radius. Height to belt is standard 37½″, other heights available. Legs are detachable and table can be suspended from ceiling if desired.



Handles loads at belt speeds to 50 fpm

Models are supplied for right or left hand operation. Operates with built-in variable speed motor with line shaft drive optional.

(Flex-i-Turn wirebelt turntables are built by J. W. Greer Co., Dept. FP, Main and Eames St., Wilmington, Mass. . . . or check FP-2388, pages 2 & 3.)

ELPAR Trucks

reduce man-hours 75%

utilize all storage space

provide fume-free food protection

CASE HISTORY

SAVING COSTLY LABOR — In this cold storage plant, four Elwell-Parkers plus operators do as much work as 16 men did by manual means . . . Here truck is storing pallet load of 50-pound sacks of onions. This Elwell-Parker, plus two men who work in freight cars palletizing the sacks, unloads and stores *four carloads* of onions in eight hours.

CHANGING SQUARE FEET TO CUBIC FEET — By assembling these crates of apples in master unit loads and high stacking them, all air conditioned space is profitably utilized. Besides achieving *roof-high* storage at *low-level* costs, there is greater order and all materials are quickly accessible.

SAFEGUARDING PERISHABLE FOODS — Contamination is impossible because these Elwell-Parkers have fume-free electric battery power. Here palletized racks of fish are rushed into cold freezer, so that doors are opened for shorter periods. Elwell-Parker's ease of control assures perfect spotting of load on this castered rack.

BIG BENEFITS LIKE THESE are being made by ELPAR trucks in *every* phase of the food industry—procurement, processing and distribution. Write for General Catalog.

THE ELWELL-PARKER ELECTRIC COMPANY
4002 ST. CLAIR AVE., CLEVELAND 3, OHIO

ELPAR INDUSTRIAL TRUCKS

When inquiring check FP 2389 on handy form, pgs. 2-3

You'll SPEED PRODUCTION WITH WEAR·EVER Aluminum FOOD HANDLING EQUIPMENT

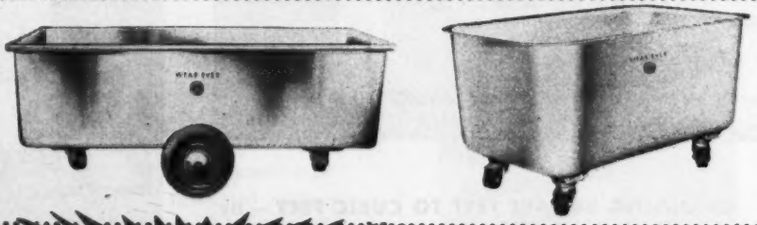
Ingredient Containers

Drums, under-counter bins, stacking containers, tubs—what's *your* plant's requirement? Chances are Wear-Ever can fill it—in the capacity, style and dimensions you need.

Light in weight, long on wear, and specially designed for mobility and easy cleaning, Wear-Ever's full line is made exclusively of friendly-to-food aluminum to protect the purity of your product.

Trucks

These easy-rolling, lightweight Wear-Ever containers keep your in-plant transportation in high gear. Type at left has 1000 lb. capacity, specially reinforced corners and new type wheels that permit lubrication inside bearings. Model at right holds 225 lbs., has swivel type casters with hard rubber wheels.



Transport Boxes

Setting records for efficiency in leading plants everywhere!

All over the country, more and more plant managers are finding items in Wear-Ever's wide line that adapt perfectly to their special handling and manufacturing needs. Chances are, Wear-Ever has a standard item that's ready-made for your specific production problems, too. Just call your Wear-Ever salesman. He'll be glad to be of help. Or write for our catalog.

Here's real portability in a wide container line to suit your requirements. Handy tote box at top stacks when full, nests when empty. All styles and sizes are light in weight, easy to handle; feature sanitary open bead for easy-cleaning. Hard, wrought alloy assures long dependable service.

MAIL COUPON TODAY!

WEAR·EVER Aluminum UTENSILS

THE ALUMINUM COOKING UTENSIL CO., INC.,
WEAR-EVER BLDG., NEW KENSINGTON, PA.

The Aluminum Cooking Utensil Company, Inc.
6704 Wear-Ever Bldg., New Kensington, Pa.
GENTLEMEN: *I'd like to know more about your Food Handling Equipment.*
☐ Send me your catalog. ☐ Have your representative see me.

NAME .....

TITLE .....

Fill in, clip to your letterhead and mail today.

NEW ITEM! *Wear-Ever's new Nickel Scouring Cloth. Won't scratch, won't mar, far outlasts ordinary scouring cloths. At your dealer's.*

When inquiring check FP 2390 on handy form, pgs. 2-3

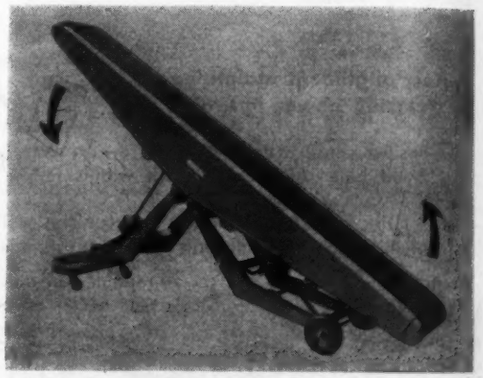
Elevates at either end to load or unload

Conveyor has capacity of 500 lb in horizontal position, 350 lb at an angle

Uses: For loading and unloading trucks, railway cars, etc., and for various off-level handling problems such as bridging from platform to platform or car to car.

Features: Very light in weight and completely mobile conveyor has positive belt tracking, start-stop-reverse switches, and controls at both ends.

Description: Power belt conveyor raises and lowers independently at either end. It adjusts from either right or left side to a 30° incline, with each supporting leg adjustable independently.



Portable conveyor raises and lowers independently

From a maximum horizontal position 61" high, both legs can be adjusted to bring conveyor surface to as low as 22" off ground. It has a capacity of 500 lb in horizontal position and 350 lb at an angle.

(SpeedLift conveyor is a product of Speedways Conveyors Inc., Dept. FP, 134 Speedways Bldg., 202-08 Rhode Island St., Buffalo, N.Y. . . . or check FP 2391 on handy form, pages 2 and 3.)

Catalog lists selection, operation, maintenance data on roller chains

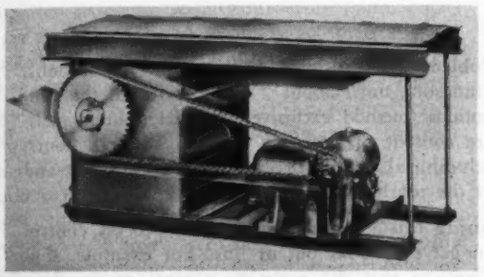
Conveyor chains (and sprockets) for wide range of handling and processing operations are described in a new 32-page catalog. Included are illustrations of such representative applications as fruit processing, carton casing and uncasing, and case sealing.

The chains embody high tensile strength. Hardened pins and bushings contribute to maintenance of original accuracy and uniformity. Stock sizes run from 1" pitch through 4" pitch of standard dimensions. They are available with standard rollers and also with large rollers

which project beyond chain plates. In smaller sizes chains can be supplied in stainless steel. Specifications for all chains and diameters of sprockets are conveniently tabulated, together with hp ratings.

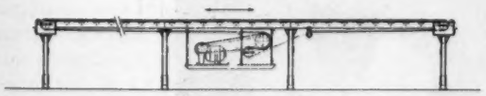
Catalog on double pitch chains and sprockets # 34 is issued by The Diamond Chain Co., Inc., Dept. FP, 402 Kentucky Ave., Indianapolis 7, Ind. When inquiring specify FP 2392 on handy form, pages 2 and 3.

Forms belt or live roller conveyors from roller gravity units



Forms belt or live roll conveyors

A new combination medium duty center drive and take-up can be combined with roller gravity conveyors to form belt or live roller conveyors. The unit is made in widths of 12″ to 24″ in 2″ increments. Widths wider than 24″ are available on special request. Gear-head motors, ½ to 1 hp are furnished as standard with a maximum effective pull of 300 lb. Unit is designed to use regular 3-ply belting.



Center drive — take-up easily installed

Accessory equipment to make complete belt conveyor systems includes end pulley assemblies, supports, and hangers.

(Combination center drive and take-up is built by Lamson Corp., Dept. FP, 303 Lamson St., Syracuse 1, N. Y. . . . or for more information check FP 2393 on handy form, pages 2 and 3.)

NEXT MONTH

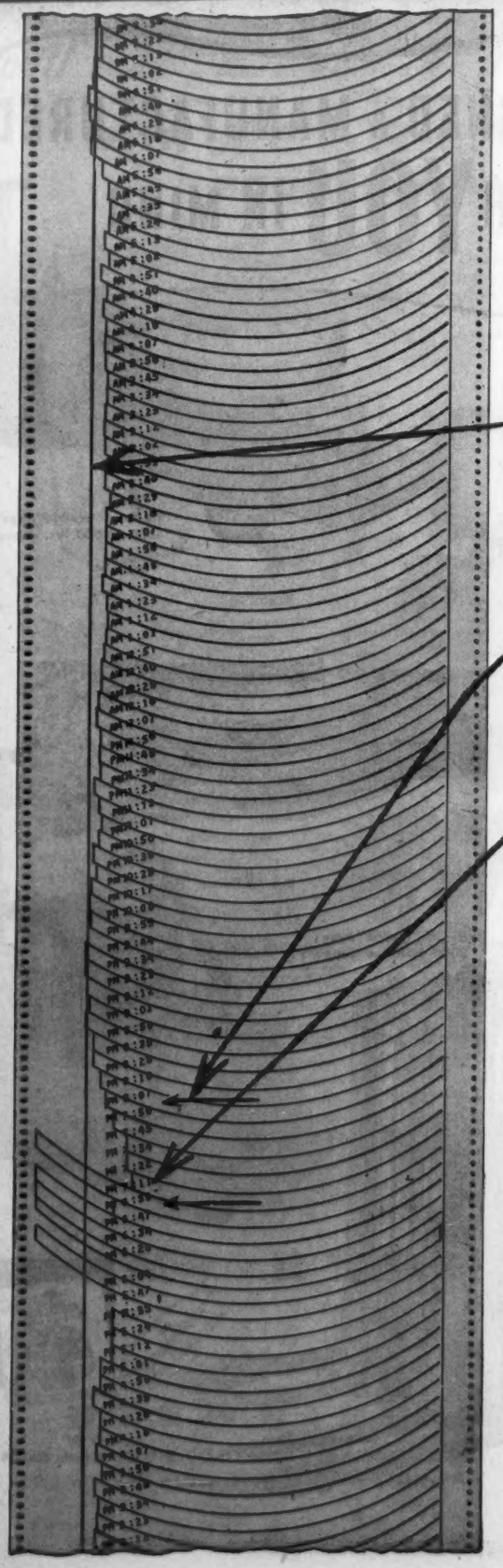
You'll read about first application in the food industry of new nesting bins. Man-hours in loading flour on trailers are cut 70%. Transportation and in-plant savings total $14,000 a year

DESIGNED & MANUFACTURED
WITH YOU IN MIND
Platform "Walkie" type
4000-10,000 lbs. capacity
Pallet type "Walkie" truck
4000-6000 lbs. capacity
Here's Why...
• Maximum Maneuverability . . . some models only 23¾″ longer than the load . . . space efficiency plus!
• Stability . . . low center of gravity offers maximum stability.
• Ease of Operation . . . Patented Roller Grip Controls offer "Simplified Operation".
• Ease of Maintenance . . . MOTO-TRUC design offers the finest in quick . . . easy maintenance.
• Safety . . . Deadman controls cut off the power and apply the brakes . . . automatically.
Grip-All Tractor
Hi-Lift "Walkie" type
3000-4000 lbs capacity
REPRESENTATIVES IN PRINCIPAL CITIES
MOTO-TRUC
Designers FOR THE INDUSTRY
PATENTED
The MOTO-TRUC Co
1988 E. 59th St. • Cleveland 3, Ohio
Pallet . . . Platform . . . Hi-Lift Trucks
LARGEST EXCLUSIVE MANUFACTURER OF "WALKIES"
Send for
Bulletin No. 54

When inquiring check FP 2394 on handy form, pgs. 2-3

Rapid detection of moisture content by continuous, in-line tester-recorder is key to continuous process control

cuts moisture analysis time from 2 hours to 12 minutes



Strip chart (left) shows results of new moisture analysis test every 12 minutes. Arrow points to 14% moisture line

Deviation from 14% level indicates possible trouble in feed rate of wheat to temper conveyor. Rapid detection of such conditions means rapid correction

¼ inch represents 1/10 of 1% so moisture reading at 7:11 PM was 13.7%

Research and Production personnel
Pillsbury Mills, Inc.
as reported by FP staff

Problem: Pillsbury Mills, Inc., Minneapolis, Minnesota, until about 2 years ago used the conventional method exclusively for determining moisture content of flour. It requires about 2 hours, including all handling, to complete each test and get the results back.

During this 2 hour long period, process control can get pretty far out of line. For example, if it is noticed that the moisture content of the flour stream is off from specifications set by buyer or mill, as many as 63,000 lb of flour can pass through a given point in the milling process in the two hours it takes to get another confirming manual moisture test result back from the lab.

Victor Gorham, miller, Pillsbury Mills, Inc., observing strip chart which indicates moisture content of flour. New test completed every 12 minutes — automatically

What's more, by the time a new test gets back from the lab, the situation may have corrected itself or, on the other hand, become much worse. The miller knows only that something was off two hours previously. He may correct for that and then find he's off again on the opposite side of normalcy.

Solution: Moisture content is now measured and recorded automatically, continuously. The instrument, located in a stream of finished flour just after it is milled and before it is sent to storage bins, completes and permanently records a moisture test every 12 minutes.

To begin the cycle, a small feed screw in the flour stream starts turning and feeds flour into a Teflon-lined chute. Means associated with the chute are employed to assure fresh flour every cycle. Next, a sample of exactly 10 grams is automatically deposited from the chute into a pan which is carried by a scale. (In case more than 2 minutes elapses before the 10 grams of material is deposited in the pan, an alarm will sound indicating some trouble.)

Then the sample is completely dried by an ingenious process which shortens drying time to about 5 minutes, and is weighed out again. Following that, a novel recording mechanism records on a strip chart the exact loss of weight (plus or minus 0.1 of 1%), the time, date, and whether it is an AM or PM reading.

The sample is then automatically discarded, and a timing mechanism starts the cycle over again.

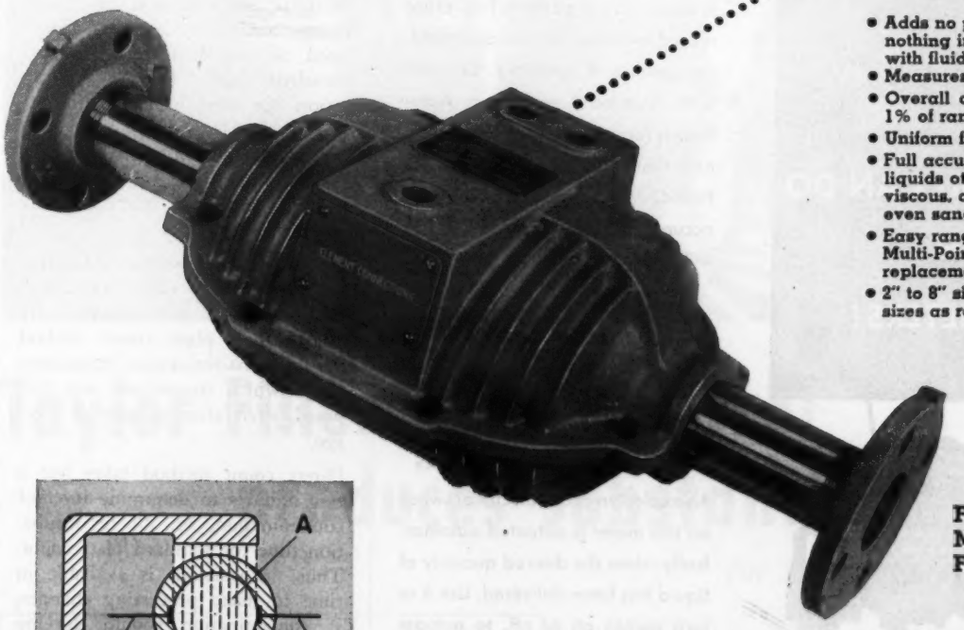
Results: Using this automatic continuous recording moisture tester, testing time has been reduced from 2 hours or more to 12 minutes. Furthermore, the human error present in conventional laboratory moisture testing has been eliminated.

This rapid and accurate detection of moisture fluctuations and prompt remedy has resulted in general improved operation and quality control. Some examples of improved operations and quality control are: In 12 minutes a new test is available automatically, thus confirming the preceding abnormal or normal readings. The running record provides information which enables the miller to recognize when he should add temper water to the wheat as it moves from its storage place to the mill. It also gives the miller the data which he needs to make minor adjustments in humidity of the mill. It gives indication to the miller that he needs to open his break rolls when the wheat is drier than ideal, and close them up when the wheat comes in too wet.

Still another example is that the miller is appraised much earlier of the need for going out to the wheat conditioning equipment and making improvements in the procedures or in the adjustment of the equipment in operation there. All of these improved operations and quality control re-

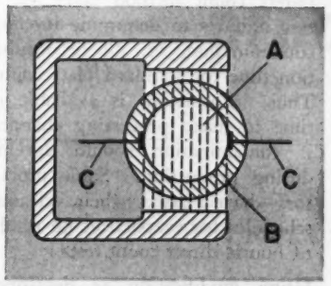
(*Continued on page 65*)

NEW! a flow meter with no flow restrictions!



- Adds no pressure drop — nothing inside pipe to interfere with fluid flow.
- Measures fluid velocity directly.
- Overall accuracy better than 1% of range over entire scale.
- Uniform flow scale.
- Full accuracy sustained even on liquids other meters can't handle: viscous, corrosive, or pulpy — even sand-water slurries.
- Easy range change — either by Multi-Point Switch or range coil replacement, as preferred.
- 2" to 8" sizes standard — larger sizes as required.

FOXBORO MAGNETIC FLOW METER



SIMPLE, TROUBLEFREE, OPERATION

The Foxboro Magnetic Flow Meter operates on the same principle as a power generator. A magnetic field (A) is maintained through a standard pipe section (B) of stainless steel or other non-magnetic material. This pipe section is lined with Kel-F® or other insulating material. Liquid passing through pipe acts as moving conductor, generating an electric voltage which varies in proportion to liquid's average velocity. Flush electrodes (C) in pipe wall "pick up" this voltage which is recorded in desired flow units by Dynalog Electronic Recorder or Controller.

This premium-performance meter measures *magnetically* the flow rate of virtually any liquid except hydrocarbons. It completely ignores such common metering headaches as turbulence, suspended solids, and variations in conductivity, density, and viscosity. It even measures reversing flows.

Installation is simple. The magnetic spool piece connects into the line like any equivalent length of pipe — no seals, purges, meter runs, or straightening vanes required. Connects by 2-conductor cable to remote Dynalog Electronic Flow Recorder.

Maintenance is practically eliminated. There are no pressure taps to become plugged or frozen, no working parts to foul.

Foxboro Magnetic Flow Meters are already in use on such widely different liquids as beer, sand-and-water, rosin size, rock-and-acid slurry, viscose, and highly corrosive liquid detergent. Find out how this precise, troublefree flow meter can help your processing. Write for complete details.

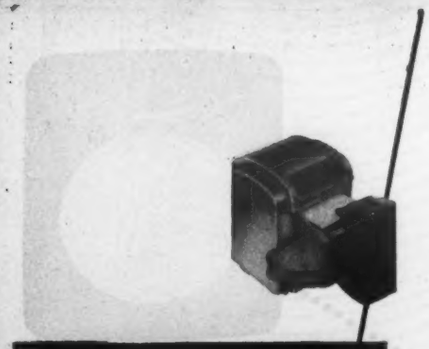
THE FOXBORO COMPANY, 924 NEPONSET AVENUE, FOXBORO, MASS., U. S. A.

FOXBORO REG U S PAT OFF

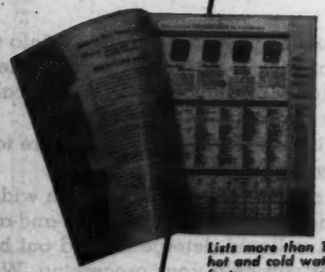
Foremost in FLOW METERING

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND

When inquiring check FP 2395 on handy form, pgs. 2-3



Look
WHAT YOU CAN DO
Now WITH
LIQUID METERS!



1. Improve Quality Control

WITH METER-PRINTED BATCH TICKETS

This Neptune Print-O-Meter automatically stamps a ticket with the number of gallons or pounds of liquid delivered to your batch or process . . . a perfect, fool-proof record for closer control over quality, costs, and inventory. Coupled with Neptune Auto-Stop or Auto-Switch features, it offers you many new time and labor savings. The Print-O-Meter is available with accurate Neptune meters from 1 to 4 in. size, 5 gpm. to 500 gpm.

2. Control Pumps, Valves, etc.

WITH AUTO-SWITCH METERS

An explosion-proof electrical switch on this meter is actuated automatically when the desired quantity of liquid has been delivered. Use it to turn pumps on or off, to actuate solenoid valves, start agitators, or control other cycling operations. Available with or without the mechanically coupled Auto-Stop valve, which also is actuated by the tripping mechanism in the register. Auto-Switch available with Neptune meters from 1 to 4 in. size, 5 gpm. to 500 gpm.

Ask for Helpful Metering Bulletin 567AFP

Lists more than 150 liquids . . . chemicals, syrups, hot and cold water, oils, etc. . . . you can measure faster, more accurately, more automatically with Neptune disc-type liquid meters.

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19 West 50th Street, New York 20, N. Y.

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neptune

When inquiring check FP 2396 on handy form, pgs. 2-3

instrumentation

Direct bacterial count is fast, easier to read

Double-dye technique indicates processing conditions of orange concentrate, even after months of storage

Improved method for direct count microscopic method of estimating bacterial contamination of frozen orange concentrate has been developed at the USDA Laboratory, Pasadena, Calif. Principle modification has been in application of dye. A double-dye technique, using North's aniline oil methylene blue and alcoholic basic fuchsin, results in a field which is easier to study without eyestrain.

Method also allows some differentiation between viable and dead cells. Thus, it will indicate more clearly than plate count method the initial bacteriological conditions under which concentrate was prepared, even after months of storage.

Direct count method takes but a few minutes to determine level of contamination, vs. 48 hr incubation time for standard plate count. Thus, information is available in time to make processing changes, if contamination should develop during production. Some processors have based their cleanup schedules for evaporators on results of hourly direct count tests.

Using modification as developed at Pasadena, orange concentrate is brought to pH range of 5.5 to 6.0 by addition of sodium hydroxide, then mixed with solution of dyes. Slide is dried under infra-red lamp, and examined under oil immersion lens. Plastic spray coating has been eliminated because of tendency to obscure focus and contribute to eye strain.

"A Direct Microscopic Method Modified for Estimation of Microorganism in California Frozen Citrus Concentrate", by E. R. Wolford, 5 pages, 7 literature references, is issued as paper AIC-365 by Bureau of Ag. and Industrial Chemistry, Ag. Research Service, United States Dept. of Agriculture, Washington 25, D. C.

Floatless
LIQUID LEVEL *and* **INDUSTRIAL CONTROLS**

● Write for latest catalog covering the complete line of B/W Induction Relays, Relay Enclosures, Contactors and Starters, Multiple Pump Controls, Electrode Holders, Starter and Relay Combinations, Special Controls and Panels.

Controls will never trouble you, when you buy B/W

B/W CONTROLLER CORPORATION
2194 East Maple Road, Birmingham, Michigan

When inquiring check FP 2397 on handy form, pgs. 2-3

NOT THIS... **BUT THIS**

Now...for a good shower

—deep freeze!

—scalding hot!

BANISH BOOBY TRAP SHOWERS

Use POWERS THERMOSTATIC Water Mixers

Real comfort and safety. No waste of time or hot and cold water.

POWERS THERMOSTATIC WATER MIXERS

—eliminate shower accidents

They are completely automatic, hold shower temperature wherever you want it regardless of pressure or temperature changes in water supply lines. Failure of cold water instantly shuts off the shower.

Tests prove Powers is safest shower regulator made for factories, schools, hospitals, hotels and clubs. Thousands now in use.

Used for Many Industrial Processes. Users report control within ½° F. Temperature Ranges: 65-115° F., 60-125° F., 75-175° F. Write for Bulletin 365. (b13)

THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in Over 50 Cities • Est. 1891

When inquiring check FP 2398 on handy form, pgs. 2-3

(*Continued on page* 63)

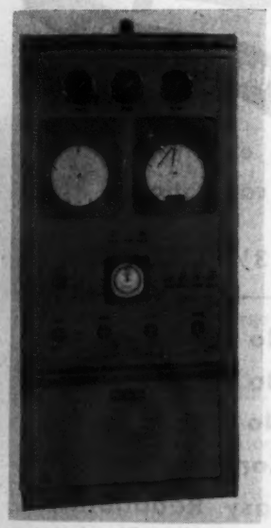
sult in a more uniform product and lower production costs.

Tester provides a permanent record on paper of every condition that existed in the stream just before the finished flour passed to the storage bins.

(Continuous moisture tester — illustrated in this article is pilot model, was developed by Pillsbury Mills, Inc., and C. W. Brabender. It has been licensed to the Brabender Corp., Dept. FP, 224 Saddle River Rd., Rochell Park, N.J., which is building and selling a production model . . . for more information check FP 2399 on handy form, pages 2 and 3.)

Controls temperature rate-of-rise and holding period temps during process

Controller has uses in starch sizing, and other time-temperature operations



Controller is mounted on right in control cabinet

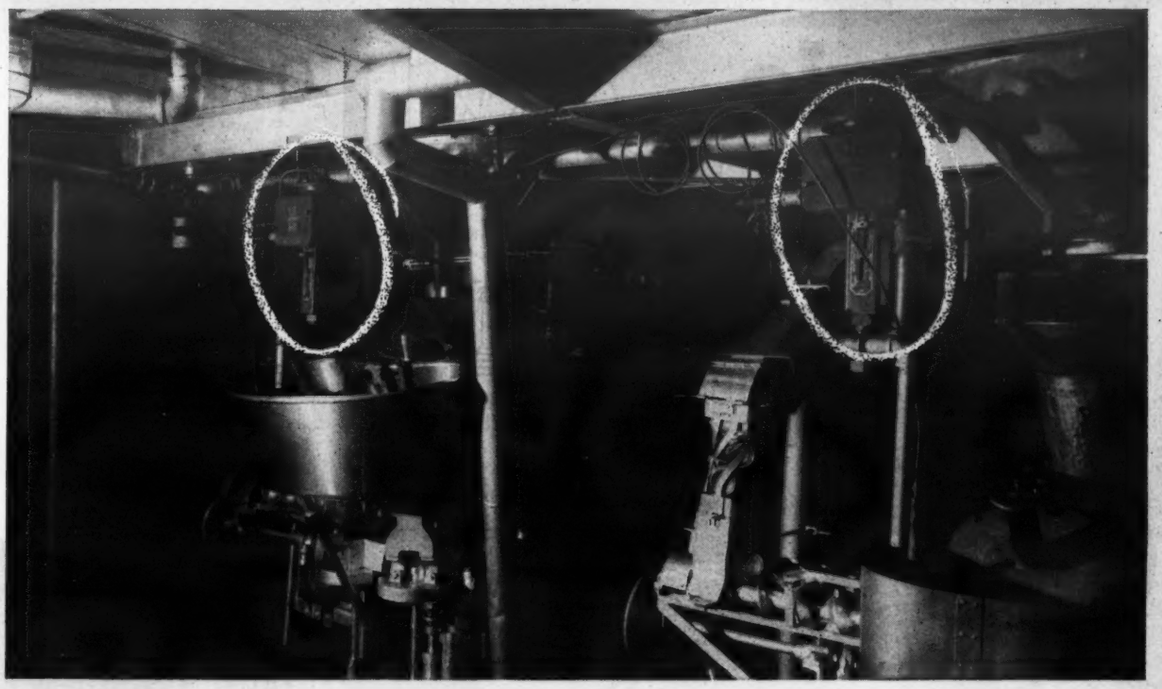
Fully-automatic control of temperature rate-of-rise and temperature holding period, with provisions for duplication of runs, can be obtained with cycle controller now on market. Unit is finding use in starch sizing, and operations where efficient temperature schedule control is essential.

Each step of schedule is set by adjusting control knobs for 1) starting temperature, 2) rate-of-rise, 3) holding temperature, and 4) holding period timer. Setting of the holding period timer starts cycle.

Amber light remains on through "rise period". When holding temperature is reached, green lamp comes on and remains throughout "hold" period. Red light signals end of cycle.

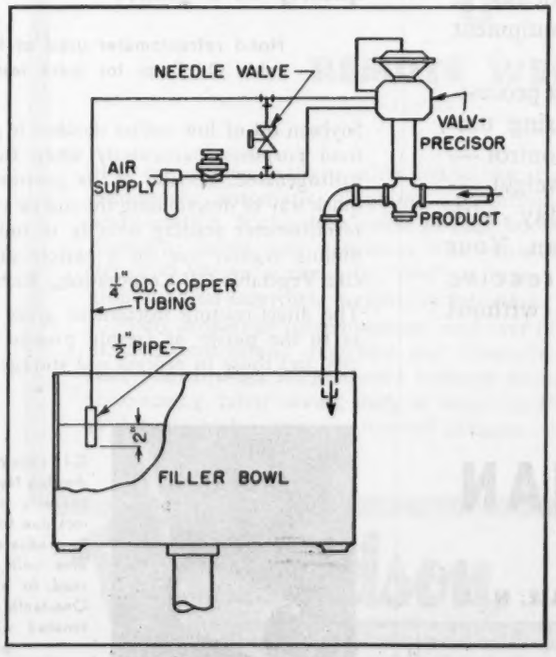
Internal heater in instrument prevents corrosion of working parts due to condensation or corrosive vapors. Instrument has continuous chart rotation, providing 24 hour records.

(Model 40 C-H CycleLog Controller is a product of The Foxboro Co., Dept. FP, 174 Neponset Ave., Foxboro, Mass. Check FP 2399A, pages 2 and 3.)



Taylor Filler Bowl Control produces substantial savings

for Libby, McNeill & Libby



ACCURATE control of the level in the filler bowls of the 10 closing machines at their Walla Walla, Washington, pea packing plant was achieved by the Taylor control system illustrated. Result—no overflow, no waste, no time lost in cleaning up the mess. In addition this Taylor control system is entirely automatic—no operator attention is required.

Filler bowl level is sensed by a simple air bubble system, the back pressure of which goes to a VALV-PRECISOR* Positioner which in turn operates the diaphragm valve in the product line. Alternative systems can be float actuated, or a 3-way sanitary valve can be used to divert the surplus back to the supply.

Preventing waste and saving operator time are just a couple of the ways Taylor instrumentation contributes to processing efficiency in the canning industry. It's very possible that automatic control can save you money too. Why not consult your Taylor Field Engineer, or write for the **new Catalog 500.**

Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

*Reg. U.S. Pat. Off.

Taylor Instruments
MEAN ACCURACY FIRST

When inquiring check FP 2400 on handy form, pgs. 2-3

"magic carpet"

TO UNIFORM PRODUCT QUALITY

The results may not show on your package label, but W&T Merchen Scale Feeders with continuous weigh-belt for weighing and feeding in one operation — can help to maintain uniform high quality in final product.

Precision scaled, durably constructed and simply controlled, W&T Merchen Scale Feeders deliver minute to minute accuracy whether feeding only a few or many thousands of pounds per hour. In modern food processing operations — premixing, batching and continuous blending — this exacting accuracy is a requisite. As further assurance of uniform quality, the Feeder may be synchronized with other equipment to shut-down automatically in the event of any equipment or supply failure.

If you have a food processing problem requiring uniform feeding and control — automatically by weight — communicate today with Wallace & Tiernan. Your inquiry will receive prompt attention without obligation.

M-22

WALLACE & TIERNAN
INCORPORATED

25 MAIN STREET • BELLEVILLE, N. J.

When inquiring check FP 2401 on handy form, pgs. 2-3

Quality Control

and the laboratory

Control chemist at Pacific Vegetable Oil Corp. reads iodine number directly from instrument

Reads iodine number directly — identifies oil, tells quality at a glance

Hand refractometer used at Pacific Vegetable Oil Corp. for quick test results

Soybean oil of low iodine number is preferred for food purposes, particularly when the oil is not hydrogenated, because of its greater stability. A quick way of determining the iodine value—a hand refractometer reading directly in iodine units—is finding regular use for a variety of jobs at Pacific Vegetable Oil Corporation., Richmond, Calif.

The direct-reading instrument gives a quick idea as to the purity of freshly pressed or extracted oils, and those in process and storage. When a lot

Close-up of instrument showing Nylon jacket, which prevents temperature errors due to handling. Scale is graduated in single iodine units, can easily be read to nearest half-unit. One-tenth units can be estimated with a little experience

PALMER

presents

an outstanding improvement in

DIAL THERMOMETERS

external calibration

Full 3½" Dial Face

- No Sector
- No Pinion
- No Linkage
- Constant Accuracy
- Easy Readability

Consult Your Directory

WRITE FOR BULLETIN 350

PALMER
THERMOMETERS, INC.
Norwood Ave., Cincinnati 12, Ohio
Mfrs. of Industrial Laboratory Recording and Dial Thermometers

When inquiring check FP 2402 on handy form, pgs. 2-3

of soybeans (or flax seeds) is received about which there is need for a quick check on quality, an oil sample is prepared and the degree of unsaturation determined immediately with the refractometer.

Instrument allows a quick means of distinguishing between linseed and soy oils, whenever positive identity of any of the wide variety of oils processed at Pacific Vegetable Oil is required. During inventory, it double-checks on existing stocks.

Instrument is used in same manner as other refractometers—oil is placed on prism, the tube directed toward a light source (either natural or artificial)—and the reading noted. Main difference is that in conventional hand models a wide range is covered, whereas a greater sensitivity is required for iodine determinations. The direct-reading iodine model covers a narrow range—between 1.4693 to 1.4817 refractive index values—equivalent to iodine numbers of 100.1 to 206.45. This range covers a variety of semi-drying and drying oils, including soy and linseed.

Temperature corrections are made by inserting thermometer in the instrument, and adding or subtracting the correction factors directly from the iodine number reading. Accuracy of instrument is better than ± 1 iodine number, when freshly pressed or extracted oil is used.

A shield of Nylon covers most of the body tube as insulation, since temperature of the oil can be changed during handling.

(Oil Grading Refractometer is product of Bausch & Lomb Optical Co., Dept. FP, 635 St. Paul St., Rochester 2, N. Y. . . . or check FP 2402A.

Reference guide for fatty acid regular test methods

This helpful publication lists some 27 chemical tests used for fatty acids, such as acid value, ash, color, iodine value, saponification value, titer, unsaponifiable, hydroxyl value, polyunsaturated acids, etc. Listing takes form of brief description plus reference to procedure source.

"Fatty Acid Tests and Terms", 20 pages, is issued by the Fatty Acid Division, Association of American Soap and Glycerine Producers, Inc., Dept. FP, 295 Madison Ave., New York 17, N. Y. Check FP 2403, pages 2 and 3.

NEXT MONTH

Be on the lookout for article describing Curtiss Candy's use of moisture tester that has cut laboratory analysis time from 6 hours down to 5 minutes

REMOTE DIALED WEIGHT SELECTION BELONGS IN YOUR BUSINESS

THIS NEW FREE BOOK TELLS THE FULL STORY OF

RICHARDSON SELECT-O-WEIGH®

REMOTE WEIGHT SETTING SYSTEMS

Here are answers to the puzzlers you've had about completely automatic weighing, proportioning and blending. Richardson's new 28-page booklet shows in detail how industries like yours use Select-O-Weigh systems to "dial" as many as 20 individual ingredient weights in formulas.

Many industrial "case histories" and over fifty easy-to-understand diagrams and illustrations take you through Richardson's material-saving, time-saving, labor-saving story of finger-tip formulation which requires no manual changes, even for fractional proportions. Send for this free booklet today. See how a Select-O-Weigh system—developed out of Richardson's 50 years of experience in building automatic weighing, proportioning and blending equipment—can solve countless problems in your change-over from conventional weighing and proportioning methods to automation.

Write today for your free copy of Bulletin 0351.

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1488

When inquiring check FP 2404 on handy form, pgs. 2-3

MOISTURE CONTENT

without involved computations!

Quickly and accurately determine the moisture content in any material—whether fibrous, granular, liquid or semi-liquid—with the DIETERT MOISTURE TELLER. No involved computations. No skilled help required!

The No. 276 Moisture Teller is a sturdy, versatile unit, equipped with a thermostat having a range of 150 to 300°F. Ideal for drying an exceedingly wide range of samples. Drying temperature is controlled within 7 degrees of the selected temperature. The Moisture Teller may also be used as a drying oven.

A complete line of Dietert Moisture Tellers is available for testing all types of materials, including large bulky samples of wool, fibres, paper and textile products. Model 276 above and Model 278A-12 at right.

HARRY W. DIETERT CO. Control EQUIPMENT

HARRY W. DIETERT CO.
9330 Roselawn Detroit 4, Michigan
Send me data on your Moisture Tellers. I want to test the following material_____
NAME_____
COMPANY_____
ADDRESS_____
CITY_____ STATE_____
F.P.

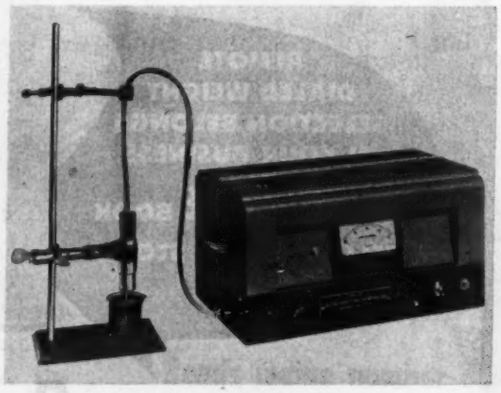
When inquiring check FP 2405 on handy form, pgs. 2-3

Measures solution viscosities from 0 to 100,000 cp by ultrasonics

Uses: For the continuous measurement of solution viscosities from 0 to 100,000 cp or higher at room or elevated temperatures.

Features: Instantaneous, accurate measurement of viscosity can be made by immersing sensing element in any liquid.

Description: Instrument panel meter instantly reads solution viscosity in centipoises times density. Probe may be mounted in ring stand or installed in pipe line or vessel. Probe may also be hand-held.



Gives direct reading of viscosity when sensing probe is immersed in liquid

In addition to a laboratory model which occupies a minimum of table space, industrial models may be used in own steel cabinets or mounted on standard relay rack. Cast aluminum housing is used on explosion-and-waterproof model.

Provisions are included for connection to standard recorder-controllers to provide continuous monitoring of processes.

(Viscosimeters are a product of Ultrasonic Engineering Co., Dept. FP, P.O. Box 46, Maywood, Ill. . . . or for more information check FP 2406 on handy form, pages 2 and 3.)

• "THAT'S INTERESTING"

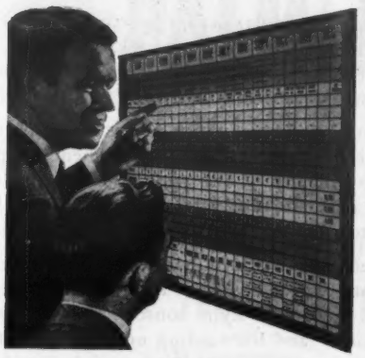
Like cheese? — Take your choice of 400 different kinds

(*Continued from page 2*)

There are more than 400 different cheeses but only about 18 distinct types or kinds of natural cheese. No two of these are made by the same method although many of the processing steps are similar.

(*Continued on page 99*)

GRAPHIC VISUAL CONTROL



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★ Graphic Picture of Your Operations—Spotlighted by Color
★ Facts at a Glance—Saves Time and Eliminates Confusion
★ Simple and Flexible—Easily Adapted to Your Operations
★ Easy to Operate—Type or Write on Cards, Snap on Board
★ Ideal for *Production, Scheduling, Inventory, Traffic,* Etc.
★ Compact, Attractive. Made of Metal. Over 50,000 In Use.

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GRAPHIC SYSTEMS, 55 W. 42nd St., New York 36

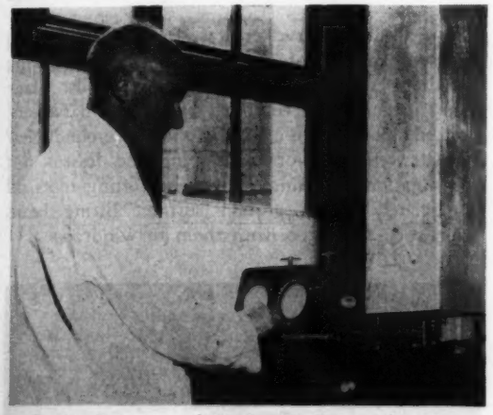
When inquiring check FP 2407 on handy form, pgs. 2-3

THE LIQUIDOMETER CORP.
39-25 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

When inquiring check FP 2408 on handy form, pgs. 2-3

Instrument checks 200 beets/day for potassium and sodium

Quality control workers at Irish Sugar Co., Ltd., Carlow, Ireland now test sugar beets for potassium and sodium quickly and easily using spectrophotometer with flame attachment. Instrument is used to check the ordinarily-used electrical conductivity tests for total Na plus K. It is also used to determine the two elements separately, which is not ordinarily done because the chemical procedure is long and tedious.



Spectrophotometer determines sodium and potassium separately, instead of the combined Na & K usually obtained by chemical means

Less than half a day is required for two men to run 100 beets. Results compare favorably with those obtained by chemical means.

(The DU Spectrophotometer with Flame Attachment is manufactured by the Beckman Division, Beckman Instruments, Inc., Dept. FP, Fullerton, Calif. . . . or check FP 2409, pages 2 and 3.)

Small processors can have quality control labs

Less than $5000 can establish a quality control lab in nearly any food processing plant, this 24-page booklet explains. Scientific control of product quality has grown so important in recent years that practically no one can afford to ignore it. Booklet points out reasons for this importance, describes steps to be taken for processor wishing to inaugurate a quality control program.

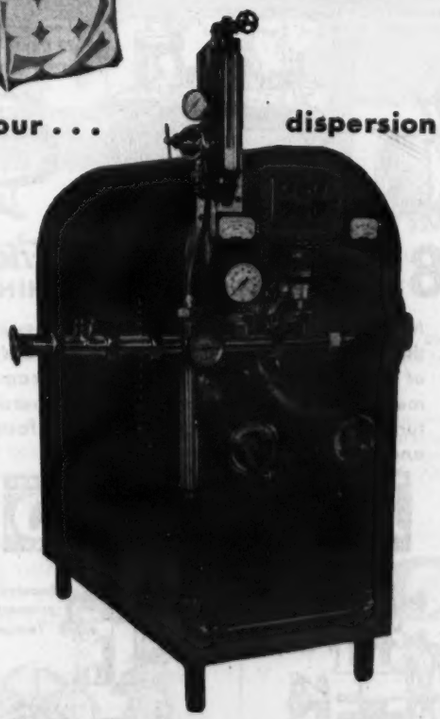
"Quality Control and Research" can be obtained upon letterhead request and a remittance of 25 cents to Scientific Apparatus Makers Association, Dept. FP, 20 N. Wacker Drive, Chicago 5, Ill.

All these products from an

Oakes Continuous Automatic Mixer!

Here's the solution to your . . . dispersion and mixing problems!

Whether your problem involves simple mixing, or difficult dispersion with extreme stability and uniformity, the Oakes Continuous Automatic Mixer offers a solution. For example, the products pictured show only to a limited extent the types of mixing and dispersion of which the Oakes mixer is capable. In product after product, and industry after industry, installation of Oakes mixers has resulted in a sensational lowering of production costs and improvement in quality.



If you have a mixing or dispersion problem including or excluding aeration, or are interested in reducing costs and obtaining improved and uniform quality, or wish to increase production, or are dissatisfied with the results you presently are obtaining, we invite you to consult with us. We shall be glad to study the problem in the light of our experience with a great variety of food and other products, and indicate the results that might be expected for your product with an Oakes Continuous Automatic Mixer.

The E. T. OAKES Corporation ISLIP, L. I., NEW YORK

When inquiring check FP 2410 on handy form, pgs. 2-3

The ideal screen for dewatering, sizing and cleaning operations. They can be adapted to fit any make of vibrator. You do not have to change your present machine to accommodate KLEENSLOT screens. They are of quality construction and their rigidity and method of installation prevents "whipping."

Complete literature is available and will be promptly sent to you if you request it on your company's stationery.

Kleenslot

This trade mark shows the non-clogging, non-blinding principle.

Wedge-Wire CORPORATION

GAS STREET AT NICKLE PLATE R. R. WELLINGTON OHIO

When inquiring check FP 2411 on handy form, pgs. 2-3

Costs for batch mixing and inter-plant handling are reduced in plant after plant when hard-to-clean containers are replaced by Hackney *Stainless Steel* Containers. That's because the Hackney advantages—swift and easy cleaning, seamless bottom head, protection against product contamination, long useful life—often result in a *lower cost per use*—when compared with present costs for other types of containers.

Available in standard sizes of 20, 30, 50 and 55 gallons. Or write for information on other sizes.

Hackney

Pressed Steel Tank Company

Manufacturer of Hackney Products

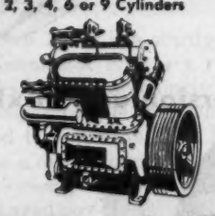
1459 South 66th Street, Milwaukee 14, Wisconsin

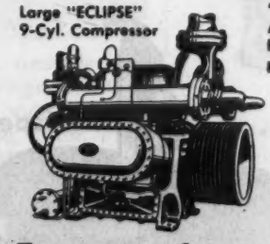
Downingtown Iron Works, Inc., Division

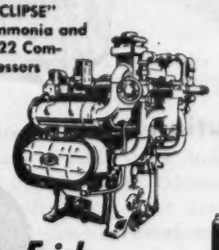
147 Wallace Ave., Downingtown, Pennsylvania

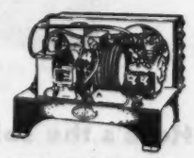
CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

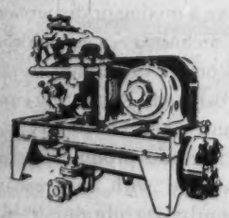
When inquiring check FP 2413 on handy form, pgs. 2-3











83 TYPES AND SIZES OF *Frick* REFRIGERATING MACHINES

Most comprehensive line of compressors in the Industry. There's one to meet the needs of your business exactly. Handle any commercial or industrial load, at any temperature, with any refrigerant! Get the full facts and figures now: write, wire or phone

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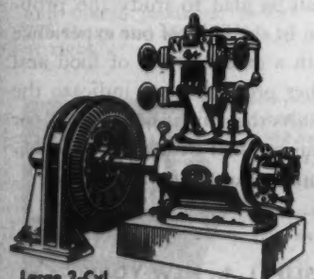
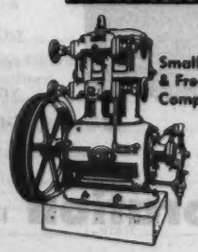
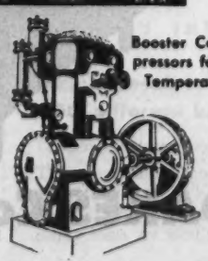
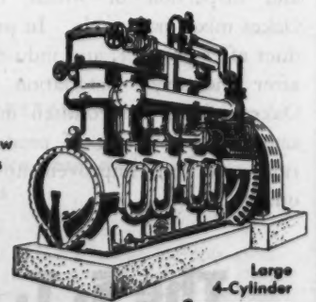








When inquiring check FP 2412 on handy form, pgs. 2-3

CROP PRODUCTION and handling

Eliminates dipped bean pods when harvesting limas

Cuts plants off below soil surface, carries less dirt to vining operation

New lima bean harvester was designed to decrease excessive amount of dirt introduced into packing operations with present harvesting methods. Many bean pods are also cut open by present harvesters, since the plants often overhang onto the ground. New harvester eliminates pod snipping and lessens dirt accumulation at vining stations by cutting roots off immediately below ground surface, lifting beans from soil, and depositing them in windrows.

Lima bean harvester cuts and windrows four 28" spaced rows at a time

Machine employs reciprocating cutter bar operating just under soil surface (present machines use stationary knives above ground). Harvester fastens onto rear of three plow tractor, cuts and windrows four 28" rows of beans at a time. Safety devices guard against accidents at critical points.

(Model CN 112 lima bean harvester is manufactured by H. D. Hume Co., Dept. FP, Mendota, Illinois. . . . or for more information check FP 2414 on handy form, pages 2 and 3.)

Fungicide helps combat Fusarium wilt organism on asparagus

Workers at the University of California have discovered that the principal reason for many asparagus fields to "run out" after reaching production peak is a fungus disease, Fusarium wilt.

They found this fungus in every field which they examined in California. Disease is characterized by reddish-brown discolorations in the plant.

Partial control is effected by treatment of seeds with slurry of Lignisan, a fungicide containing 6¼% ethyl mercury phosphate as the active ingredient. This treatment eliminates the organism from surface of contaminated seeds, but is not a control for the wilt in old fields or when planting into infested soils.

(Information obtained from a paper given by R.G. Grogan and Kenneth Kimble at meeting of American Phytopathological Society at Estes Park, Colo. The workers are connected with the Plant Pathology Dept., University of California, Davis, Calif.)

(Lignisan is produced by E.I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Div., Wilmington 98, Del. . . . or for more information check FP 2415 on handy form, pages 2 and 3.)

• "THAT'S INTERESTING"

These caps keep heads cool — just moisten 'em before wearing

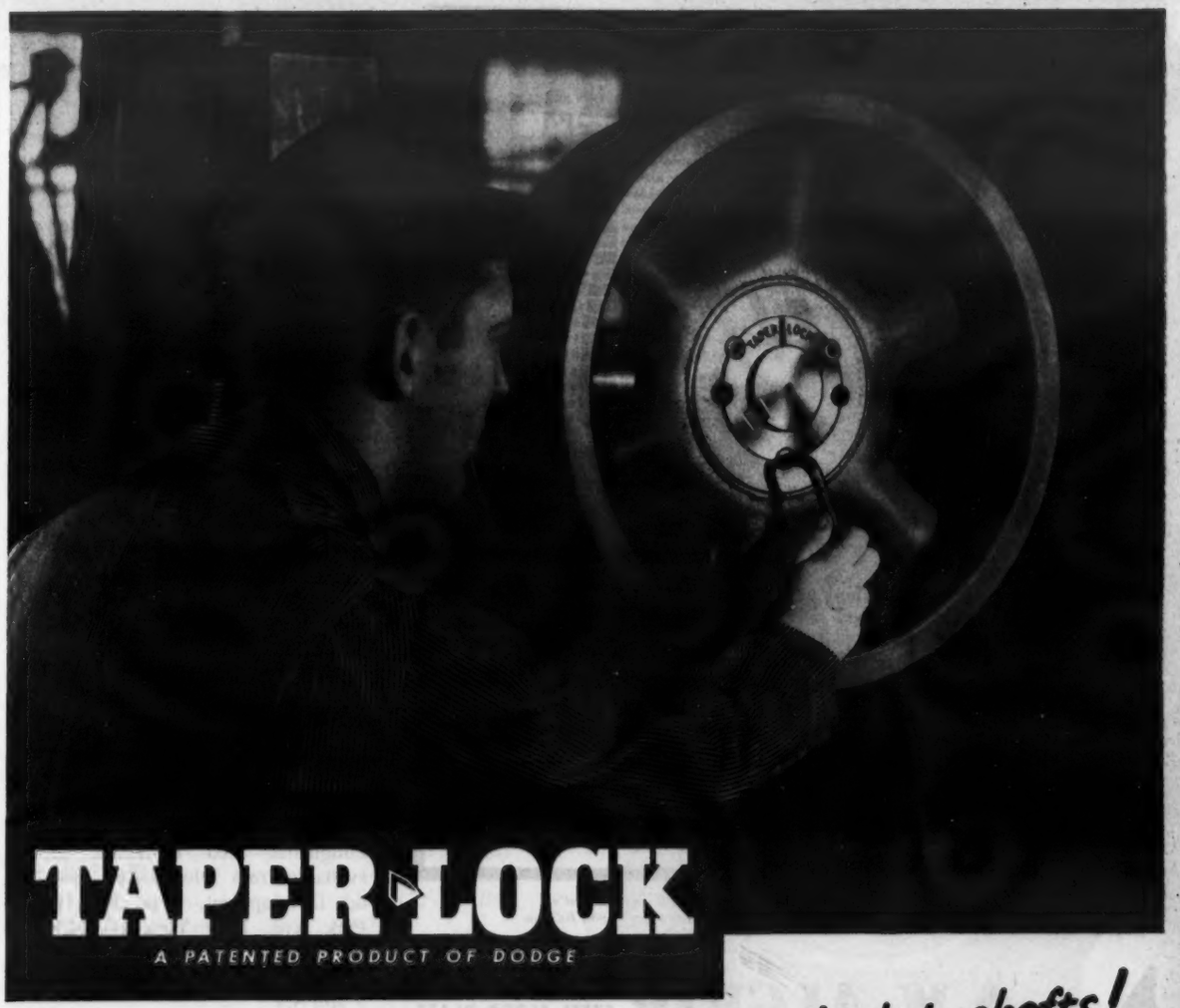
It's easy to keep a cool head when wearing a novel cap made from duPont cellulose sponge. Worn while wet, it retains its coolness and moisture for hours. Cap is easily cleaned with soap and water.

"Gentlemen — as we're all wearing our head cooling caps, let's talk about taxes"

Plant workers find caps offer relief from high operating temperatures or summer heat.

Made in a variety of sizes and colors by Kay-Gee Corp., Dept. FP, 213 W. Wisconsin Ave., Milwaukee, Wis. . . . or for more information check FP 2416 on handy form, pages 2 and 3.

(*Continued on page* 99)



The simplest, surest means of mounting wheels to shafts!

Slip it on the shaft, line it up and tighten while sighting! Mount sheaves, sprockets, couplings, conveyor pulleys *quicker*—and more easily—with Taper-Lock bushings. A few twists of a hex wrench and Taper-Lock grips the shaft with the firmness of a shrunk-on fit. It comes off as easily, without shock to bearings or machinery. Bushing seats evenly along entire length of the hub—*wheels run true!*

Standardize on Taper-Lock. You save time and money and keep production rolling with these *interchangeable* bushings. See your Dodge Distributor, or write us for the full Taper-Lock story.

CALL THE TRANSMISSIONEER, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone directory, or write us.

THERE'S ONLY ONE TAPER-LOCK, THE BUSHING THAT MOUNTS FLUSH!

Standardize, economize with Taper-Lock, the bushing that is interchangeable in Dodge sheaves, sprockets, couplings and conveyor pulleys. *More than 2,000,000 in use!*

DODGE
of Mishawaka, Ind.

DODGE MANUFACTURING CORPORATION, 2400 UNION STREET, MISHAWAKA, INDIANA

When inquiring check FP 2417 on handy form, pgs. 2-3

The COMPANY TREASURER knows

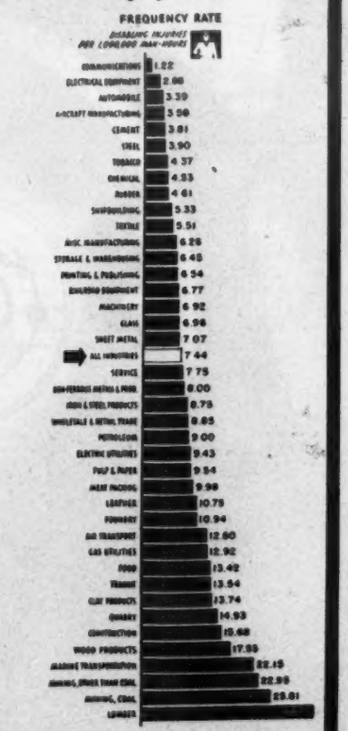
. . . that safety against slipping on plant floors is an unseen factor in the balance sheet . . .

. . . that every plant equipped with ALGRIP Abrasive Rolled Steel Floor Plate reduces its accident rate . . . its lost man-hours of production . . . its compensation payments . . . and its insurance rate . . .

Because ALGRIP . . . the world's only abrasive rolled steel floor plate . . . has a surface that makes slipping impossible . . . on level floor or incline . . . wet, oily or greasy . . .

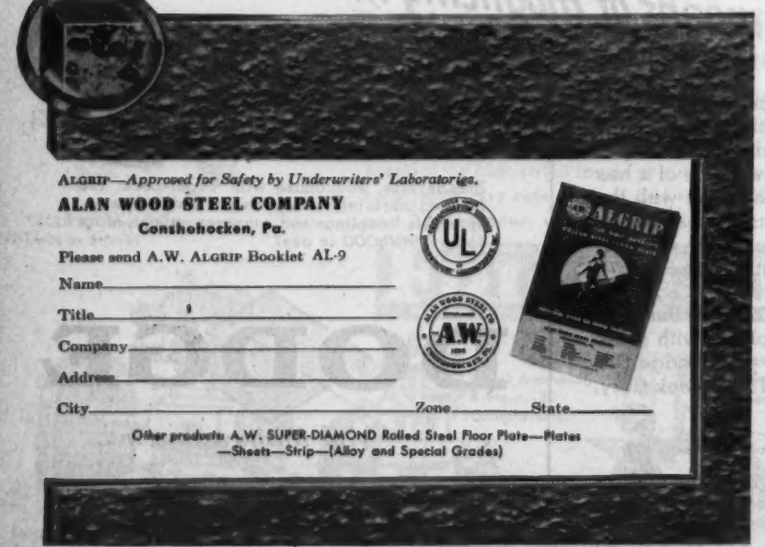
And because ALGRIP's controlled-depth of abrasive penetration in the plate assures a constant, enduring safe-against-slip floor surface.

1953 injury rates*



National Safety Council's "Accident Facts" 1954 Edition

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE



ALGRIP—*Approved for Safety by Underwriters' Laboratories.*

ALAN WOOD STEEL COMPANY
Conshohocken, Pa.

Please send A.W. ALGRIP Booklet AL-9

Name_____

Title_____

Company_____

Address_____

City_____ Zone_____ State_____

Other products: A.W. SUPER-DIAMOND Rolled Steel Floor Plate—Plates —Sheets—Strip—(Alloy and Special Grades)

When inquiring check FP 2418 on handy form, pgs. 2-3

crop production

Experimental fungicide promising for prevention of seed decay

Preliminary tests with this fungicidal seed protectant have yielded promising results in preventing seed decay and "damping off". Best results obtained were with peas, sweet corn, oats, garden beans, and lima beans. Performance in both greenhouse and field was generally equal to or better than that of other agents tested. Results indicate that fungicide is somewhat specific for legumes, although other crops are not precluded.

Low animal toxicity is also indicated by preliminary tests. Acute oral toxicity experiments with rats and rabbits showed no deaths at dosage levels of 1400 mg/kgm body weight for rats and 420 mg/kgm for rabbits.

Fungicide (1,3-dichloro-5,5-diphenylhydantoin) is white to near-white, free-flowing solid. It has mild chlorine-like odor.

(Sample quantities of "B-856" Fungicidal Seed Protectant are available from Ethyl Corp., Product Development, Dept. FP, 100 Park Ave., New York 17, N.Y. . . . or for more information check FP 2419 on handy form, pages 2 and 3.)

On-farm storage of liquid nitrogen fertilizers facilitated by low-cost tanks

Designed for on-farm storage of recently-developed liquid nitrogen solution fertilizers, these low-cost horizontal tanks are constructed of aluminum to resist corrosion. They are made in variety of sizes—100, 270, 500, 830, and 1000 gallons. Three largest tanks can be factory-equipped with skids for easy handling. All joints are welded.

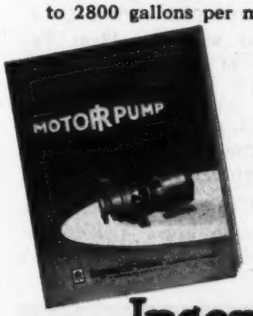
(Tanks are manufactured by Butler Manufacturing Co., Dept. FP, 7312 E. 13th St., Kansas City 26, Mo. . . . or for more information check FP 2420 on handy form, pages 2 and 3.)

Are Your Pumps Dependable?

Dependability of your pumps may mean the difference between uninterrupted production and complete shutdown. You cannot afford shutdowns due to mechanical failure in your pumping system. Switch to Ingersoll-Rand MOTORPUMPS for more dependability.

MOTORPUMPS mount in any position and require no special foundation. Select the right units for your job from the most complete line of space-saving centrifugal pumps manufactured. Write for our new Bulletin on this line from ¼ through 75 horsepower . . . capacities to 2800 gallons per minute . . . heads to 650 feet. Prompt shipment from either factory or branch stock.

We can help you with any size pumping problem with units to 4000 horsepower.



Ingersoll-Rand

9-160 11 Broadway, New York 4, N. Y.

When inquiring check FP 2421 on handy form, pgs. 2-3

NEW! All-Stainless Quick Assembly Hose Clamp

Marman Designed for the food and chemical processing industries...

field tested on creamery tank truck hoses for more than a year. Wide strap grips hose tight without cutting. Quick-coupler and wing nut will not vibrate loose. Specify where requirements include ruggedness and dependability under constant cleaning and reuse.

Order 17340 Hose Clamp, state hose O.D. to 1/16"

17340 — 2.50

Series No._____

Dia. expressed in hundredths inches (100=1 inch)_____

Write, wire or phone Dept. FP-455

THERE IS A MARMAN CLAMP OR COUPLING AT EVERY GOOD JOINT

MARMAN PRODUCTS CO., Inc.
11214 EXPOSITION BLVD.
LOS ANGELES 64, CALIF.

7-443

When inquiring check FP 2422 on handy form, pgs. 2-3

BRIEFS from contemporary publications

Here's a quick look at articles appearing in other technical and business magazines . . . selected by the Editors

British trailer delivers flour in bulk

Newly developed in England is an aluminum trailer which will haul 14 tons of flour in bulk, deliver it in fluidized form in an air stream through 3-inch pipes. A full load discharges in 45 minutes. 3 pages, 4 photos. (*"Engineering,"*

July 2, 1954, *page* 1. For more information, write to Henry Simon Ltd., Dept. FP, Cheadle Heath, Stockport, Great Britain)

Off-flavors in milk — their causes and some cures

The flavor of milk is so subtle and complex that traces of foreign materials cause serious loss of acceptability in the product. Off-flavors resulting from heat, light, and oxygen and from ketosis of the cow are discussed. Much of the chemistry of these flavors is now known, which leads to suggestions on their control. 3 pg. (*"Agricultural & Food Chemistry," Nov.* 10, '54, *p* 1182)

Design of candy equipment aided by measurement of viscosity

One of the newer devices for measuring viscosity has been used on candy, both hot and during cooling, as an aid in process and equipment design. Viscosity of cooked confections is non-Newtonian. This is to say, the candy gives different readings at different spindle speeds and therefore handles differently at different pump speeds. The viscosities are high—about one million centipoises at 150°F. 7 pages, 2 photos, 9 graphs. (*"Manufacturing Confectioner," November* 1954, *page* 29)

Basic properties of plastic films

Tests of the plastics most commonly used in packaging, run at the Bureau of Standards, have shown average values and ranges on the physical properties of greatest interest. Details are given on sampling and test methods as well as results. 12 pages, 12 tables, 1 sampling diagram, 11 graphs. (*"Modern Plastics," June* 1954, *p.* 203)

Studies on monosodium glutamate

An extensive survey of the effect of monosodium glutamate on the acceptability of a wide variety of foods has shown that many foods benefit from the addition of MSG, but some do not. No patterns were found to make possible a clear prediction whether MSG would help an untried food. Tables show specific food tried and levels of MSG needed. 4 pages, 6 tables. (*"Food Engineering," December* 1954, *page* 71)

New equipment — buy or lease?

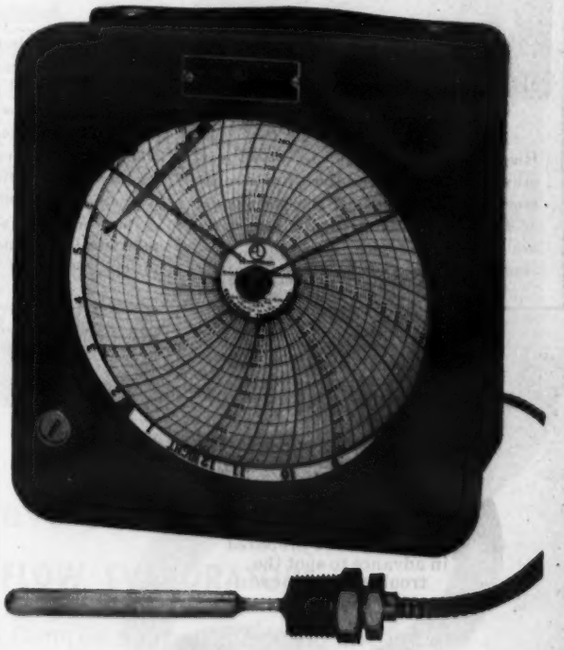
New capital equipment is often available for either purchase or lease or even on a combined plan. The various types of contract are discussed, indicating characteristics provisions along with advantages of each. Treasury Department opinions on the tax status of the various plans are included. Specific attention is given to materials handling equipment, and there is a list of companies having such equipment for rent. 7 pages, 3 tables. (*"Modern Materials Handling," November* 1954, *page* 89)

Calculating operating costs on fork lift trucks

Studies with a motion picture camera have led to a set of standard costs for operation of fork lift trucks. Examples and discussion show how this work can be applied to similar operations elsewhere to give usable cost figures. 4 pages, 2 tables, 1 flow diagram, 1 graph, 3 sample flow process charts. (*"Modern Materials Handling," November* 1954, *page* 103)

New TEMPERATURE RECORDER...

AUTO-LITE



Available with 24-hour or 7-day electric or mechanical chart drive.

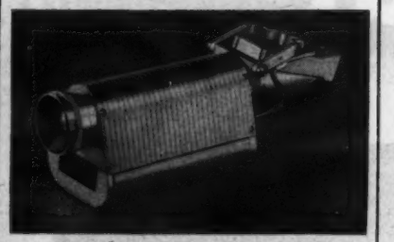
Model 1000 is the latest addition to the Auto-Lite line of temperature recorders and indicators. It has evenly calibrated, 6-inch chart . . . attractive die-cast case. Various standard chart ranges from minus 40°F. to plus 550°F. The style illustrated is portable type, with capillary tubing. Also available for mounting on panel boards or walls. Obtainable with a cycle indicator for refrigeration. Priced from $49.50. Write for further information.

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION
TOLEDO 1, OHIO
NEW YORK CHICAGO SARNIA, ONTARIO

When inquiring check FP 2423 on handy form, pgs. 2-3

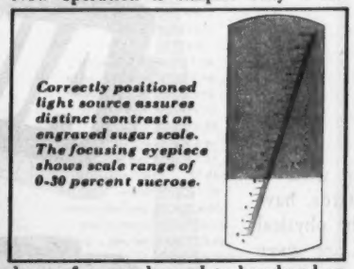
When to Pick or Pack? *Know in Seconds!*

New AO Hand Refractometer Determines Dissolved Solids Instantly!



New AO Hand Refractometer with anodized aluminum finish

Here's real news for food processors and growers! With AO's new Hand Refractometer accurate readings of the percentage of dissolved, solids, particularly sucrose, are made on the spot . . . instantly! Gone is the need for any reference to a thermometer or to temperature correction tables. The secret? AO's design engineers have simplified the temperature correction procedure by means of an exclusive, internal compensating device. Now operation is simple. Only a few drops of a sample need to be placed on the surface of the measuring prism. Using either transmitted or reflected light, the refractometer provides *immediate readings* from an internal graduated scale (range: 0-30 per cent sucrose) which is visible through the focusing eyepiece. Accuracy is assured to 0.1 percent.



Correctly positioned light source assures distinct contrast on engraved sugar scale. The focusing eyepiece shows scale range of 0-30 percent sucrose.

A built-in light source assures ideally positioned illumination under all conditions. Made of anodized aluminum, the new refractometer is light weight, easy to clean. An ever-ready top grain leather carrying case permits use of instrument without removal from case.

If you test raw products for ripeness; if you process fresh juices, syrups, tomatoes, etc., write Dept. P 220, American Optical Company; Buffalo 15, New York, for complete information on the new Refractometer. Ask for CATALOG L20.

Light wherever you go! Opening on underside of carrying case shows thumb button for built-in light source

American Optical

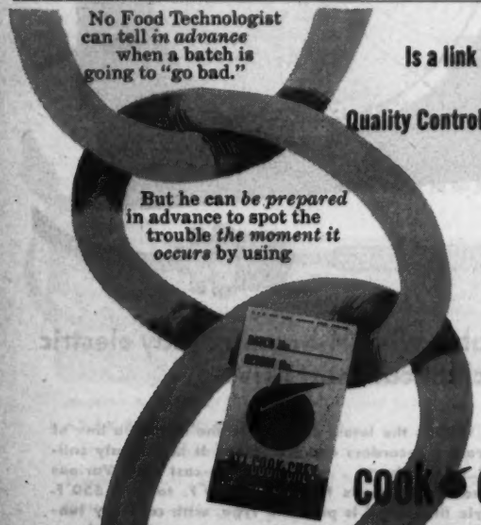
INSTRUMENT DIVISION, BUFFALO 15, N. Y.

When inquiring check FP 2424 on handy form, pgs. 2-3

No Food Technologist can tell *in advance* when a batch is going to "go bad."

Is a link missing in your Quality Control Chain?

But he can *be prepared* in advance to spot the trouble *the moment it occurs* by using



cook-chex

SEND TIME-TEMPERATURE SPECIFICATIONS FOR YOUR COOK-CHEX INDICATORS CUSTOM-MADE TO FIT YOUR REQUIREMENTS

COOK-CHEX FP-4
11471 Vanowen St. North Hollywood, Calif.

Without obligation, please send me a supply of COOK-CHEX indicator tags designed for use at _____ degrees F., for _____ minutes.

Name _____

Position _____ Company _____

Address _____

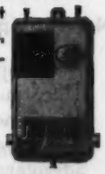
City _____ State _____

When inquiring check FP 2425 on handy form, pgs. 2-3

ACCURATE

Lumenite Electronic LIQUID LEVEL CONTROLS

With no floats—no moving parts in the container (except non-conductive liquids) these Lumenite Electronic Liquid Level Controls maintain exact levels of water, milk, syrups, etc., in tanks, reservoirs, boilers, processors, freezers—either open or under high pressure.



Clean—Sanitary

Simple to Install

Require no Servicing

Write for Bulletin FLM—on Liquid Level Controls
Bulletin ITC—on Ice Thickness Controls
Bulletin FN—on Non-Conductive Liquids

Lumenite Automatic TIMING CONTROLS

Lumenite Timers are the simplest, sturdiest and longest life. Accurate to fractions of a second, they speed and make more accurate all types of timed production.

For Details ask for
Bulletin LT—Standard Time Switches
Bulletin CR—Cycle Repeating
Bulletin PC—Program Clocks
Bulletin R—Time Delay Relays
Bulletin RMC—Auto. Reset Timers
Bulletin ET—Electronic Timers

DEPENDABLE

Lumenite Electronic Company

407 S. Dearborn St., Chicago 5, Illinois

When inquiring check FP 2426 on handy form, pgs. 2-3

IDEAS

research

other industries

managerial practices

shipping lettuce in bags

- container costs cut up to $55/carload
- shipping weights reduced about 800 lb/carload
- storage space for empties cut by 75%

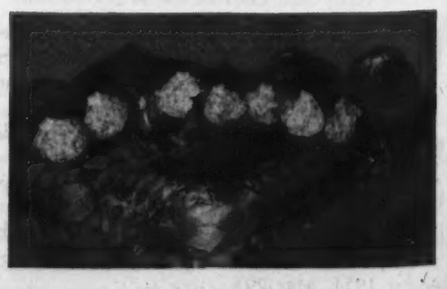
Multiwall paper bags as shipping containers for lettuce have proved more than successful in recent cross-country shipping tests. In addition to the lettuce reaching destination in good condition, substantial savings were effected in container costs, shipping weights, and storage space.

Actual figures obtained from tests: Bag costs were up to $55/carload less than conventional containers; bag weights about 800 lb/carload less. In addition, empty bags require only 25% as much storage space as conventional containers. They can be thrown away after using.

Preliminary investigation shows that cost and

At destination lettuce bags (partially unloaded) show no sign of damage after 2000 mile rail trip

In retail store cooler, one bag is opened and lettuce cut in two to show that heads are still firm and crisp



speed of packaging with automatic machines will at least match present methods—bags require no "set-up" time, and cost of closing materials should be substantially lower.

Bags are made of wet strength paper to resist moisture, and are perforated for ventilation. They are filled, 12 heads to the bag, in field or packing shed, and shipped to cooling point. Recently developed vacuum cooling methods are used to insure rapid cooling. Then, bags are loaded into refrigerator cars with bunker icing. They may be safely stacked 10 bags high in the cars without danger of crushing.

Similar tests have been made with carrots, prepackaged in plastic bags. Reduction of almost 50% in container cost — upwards of $80 per carload—was effected. Savings in shipping weight amounted to more than 1000 lb per carload.

(Multiwall paper bags for lettuce are a development of Bemis Bro. Bag Co., Dept. FP, 1000 Sansome St., San Francisco 26, Calif. . . . or for more information check FP 2427, pages 2 and 3.)

An Automation Dictionary for the asking . . .

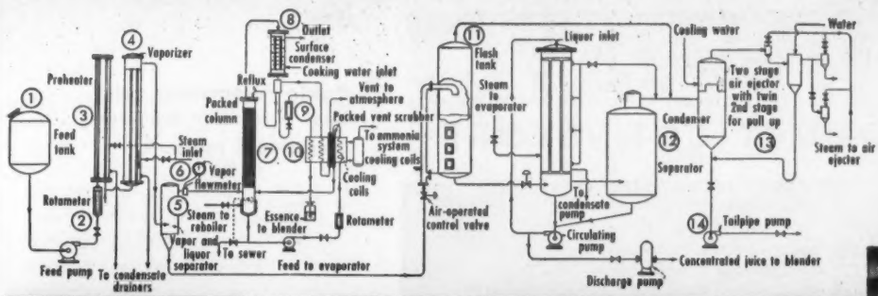
Automation introduces so many new words or terms, that to those outside the profession of automatic control engineering it seems almost like another language. A helpful step has been taken in issuing a booklet that provides definitions for the layman.

It covers some 87 words and phrases such as "sinusoidal", "optimalization", and "cybernetics". Many of the words, however, look like ordinary English, but they have special meanings. All these words crop up more and more which means an automation "language".

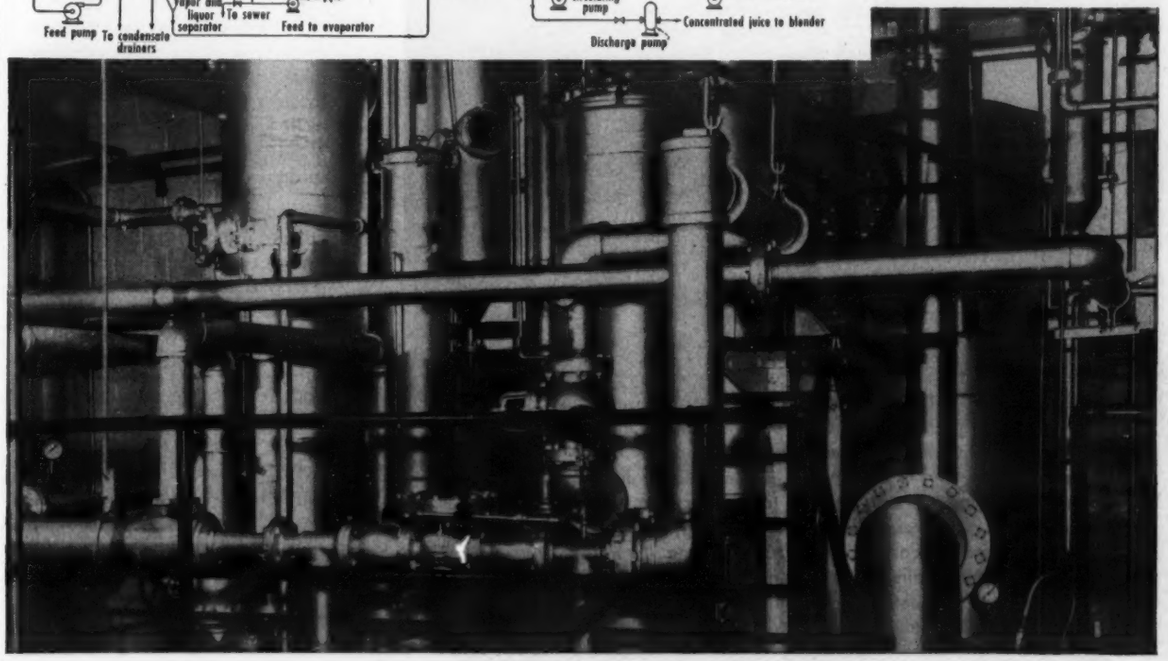
No claim is made that this dictionary embraces the full meaning or scope of this new and colorful jargon. It does, however, translate some of the most widely used terms into basic English. The Editors of FOOD PROCESSING *have pointed out in the past that automation itself is not new. It's just a new word that has necessitated more new words, to be used along with it. We will continue to cover results of applications of automation that are of importance to food processors.*

Automation dictionary is issued by the Industrial Div., Minneapolis-Honeywell Regulator Co., Dept. FP, Wayne & Windrim Aves., Philadelphia 44; Pa. When inquiring specify FP 2427A, pages 2 and 3.

THE EDITORS



● A Buflovak De-Esterizer is used in combination with a Buflovak Low-Temperature Down-Flow Evaporator in the systems for producing Keystone concentrated grape juice.



To concentrate *heat-sensitive* grape juice without loss of flavor, Keystone selected

BUFLOVAK LOW-TEMPERATURE, DOWNFLOW EVAPORATORS

Tests proved that processing methods used for frozen orange juice concentrates could not be economically applied to concentrating grape juice without loss of flavor and aroma. The addition of raw juice "cut-back" to restore aroma and flavor proved to be unattractive economically.

Keystone Cooperative Grape Juice Association solved the problem with a Buflovak De-Esterizing System and a Buflovak Single-Effect, High Vacuum, Low Temperature Downflow Evaporator. Fragrant, volatile aromatics are first stripped from the raw juice and collected at a concentration of 100-150 fold. This essence is then returned to the finished juice after it is concentrated, giving it all its original fresh, full-bodied flavor.

No matter what the food product you make that needs concentration, Blaw-Knox Engineers can design and build Evaporators to fit the requirements for size of evaporator, temperature and pressure.

We invite you to bring your problem to us.

A Complete Process Equipment Service

Fruit Juice concentration is but one phase of Blaw-Knox Process Equipment design, engineering and fabrication service for the chemical, food, pharmaceutical, plastic and resin, petroleum, rubber and other industries:

EVAPORATION • DRYING • FLAKING • IMPREGNATING REACTION • VULCANIZING • CRYSTALLIZATION SOLVENT RECOVERY • SOLVENT EXTRACTION MIXING • POLYMERIZATION • GAS CLEANING GAS ABSORPTION • VAPORIZATION • CONDENSATION HEAT TRANSFER • STERILIZING • LOW and HIGH PRESSURE PROCESSING • DISTILLATION

Everything in Process Equipment

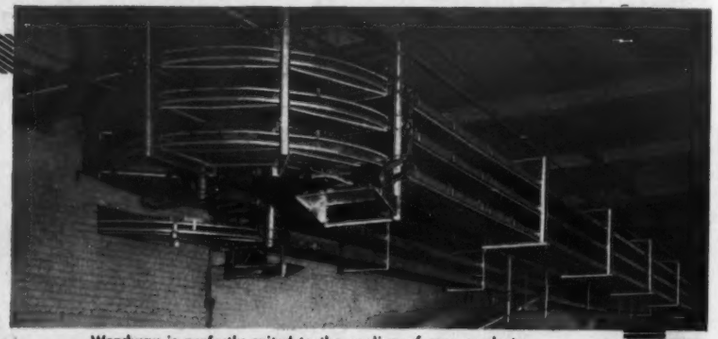
BLAW-KNOX COMPANY

BUFLOVAK EQUIPMENT DIVISION
1559 Fillmore Avenue, Buffalo 11, N.Y.

Catalog 351 is available on request.

When inquiring check FP 2428 on handy form, pgs. 2-3

WENDWAY
LIGHT PRODUCT CONVEYORS



Wendway is perfectly suited to the cooling of raw products, packages or containers. This "spiral" system travels the cooling products at ceiling height to conserve valuable floor space.

Cut Handling Costs!

Wendway is the modern, light product conveying system that delivers your product to any place you want it . . . smoothly and silently Through the wall, upstairs or down, all around the plant. Wendway turns corners, goes down the assembly, packing or shipping room line, or back again, in single file or multiple tiers, runs fast or slow, or switch tracks to another part of the plant. Wendway is really *versatile!* And . . . Wendway saves you money in space, handling costs, convenience and time. It's trouble-free and easy to maintain. Investigate the many Wendway advantages for light product conveying, then see for yourself the many places you could benefit through Wendway's versatility.

This simple, single-tier Wendway system is used to convey fancy packaged nuts from bag loaders through a series of stapling machines and then on to boxing stations.

As fresh sliced cold meat travel by on the Wendway conveying system, the operator labels each type as they proceed to the automatic package wrapping machine.

A typical package conveyor installation, this three-tier Wendway system extends the full length of the shipping dock and carries a steady flow of packages to the waiting trucks.

WRITE TODAY

Gentlemen:—

Please send me complete information about Wendway Conveyor systems as they apply to_____

Name_____

Company_____

Street_____

City_____ Zone_____ State_____

Have a USP Conveyor Engineer contact me at once_____ ☐

USP

UNION STEEL PRODUCTS CO.

ALBION, MICHIGAN

When inquiring check FP 2429 on handy form, pgs. 2-3

ideas

Pickle researchers tell best cucumber varieties, carotenoid method

Two reprints of interest to pickle makers are available from USDA. One describes research on cucumber varieties—workers discovered that pickle quality varies greatly with particular strain used. Best pickles were made with Model, Packer, Ohio MR-17, and Earliest of All cucumbers.

Second paper reports an improved procedure for demonstrating carotenoid pigments in yeasts. These workers found that carotenoid production covers wider range of yeast types than was previously suspected.

Both reprints are available from USDA Southern Utilization Research Branch, Dept. FP, 2100 Robert E. Lee Blvd., New Orleans 19, La.

Pressure chamber has possible use in fumigating or flavoring foods

Unit suitable for gaseous impregnation of synthetic smoke into foods

Two push buttons control operation of this pressurizing chamber, which has possible use for fumigation of food products, or gaseous impregnation of flavors or synthetic smoke into food products. Pressures up to 30 psi are obtained in unit which has no bolts to tighten or coyers to move for each use. It has been used successfully to test TV and other vacuum tubes against collapse, right in their shipping cartons.

To operate, cartons or racks are rolled into unit, one button closes doors and pressurizes, the other releases pressure and opens doors. Pressure can be maintained for any desired length of time. Load is ejected through one door by pushing new load into chamber through the other.

Unit is air-operated, electrically-

I'M YOUR MAN.

Have you a client within the One Hundred Mile Metropolitan Philadelphia, Penna. area requiring personal contact? Want to find out why you are not receiving their business — a complaint to be investigated or adjusted — a slow account to be jogged up a little in a nice way or otherwise, (no collections), perhaps a new prospect, ripe for a missionary visit prior to circularizing or a call from your regular sales force; a shipment to be inspected on arrival, maybe sampling supervision, then

I'M YOUR MAN.

Here is ME —

Resident of my own home in a nearby Philadelphia Suburban Community for over thirty years — thirty five years with last Employer in a supervisory capacity. Technical background, now a pensioner therefore requiring only a nominal fee per call and report basis. Interested only in part time contacts as outlined above with reputable establishments. Not interested in stock promotion, insurance or home canvassing. Please address

F. P.

P.O. Box No. 36,

Merchantville 8, New Jersey.

When inquiring check FP 2430 on handy form, pgs. 2-3

Stainless Steel and Nickel Alloy

THOMSEN

Equipment for the Processing Industries

SANITARY & BRINE PUMPS
Direct drive, and heavy duty coupling types. Smooth, steady flow. Higher production, lower cost. Sanitary rotary seal. Precision workmanship means less wear and longer service. Easier to keep clean. Write for descriptive data, prices, etc.

$31.15 UP

VALVES AND FITTINGS
Complete line nickel alloy and stainless steel. Finest of workmanship in every detail. No pit-holes or rough surfaces. Highly polished to mirror smoothness. Easily cleaned.

DAVIS CIP FITTINGS
Proved the most practical and sanitary for cleaned-in-place pipelines. Old lines and fittings may be converted, also, by a simple grooving operation; tools available.

LINE FILTERS AND TUBING
1", 1½" and 2" connections; 1000 to 4000 lbs. per hour capacities. Stainless steel and nickel alloy tubing; all lengths, all finishes; 1" to 4" diam.

SUPER-SPEED TOOLS
For expanding 1" to 4" sanitary pipe line connections.

L. C. THOMSEN & SONS, INC.
KENOSHA, WISCONSIN

BE WISE BUY WISE

When inquiring check FP 2431 on handy form, pgs. 2-3

ERTEL ASBESTOS FILTER SHEETS

...Used where performance counts!

Ertel asbestos sheets are available in ten uniform grades for all filters up to 25" square. Manufactured under rigid control, they are acid treated to meet Ertel standards of low leachable calcium and iron content. Sheets are checked constantly by a reputable analytical laboratory . . . Copies of their reports are available.

If you are not already a user of Ertel sheets, try them at no obligation on your next filtration run. We will test filter your product at no charge in our laboratory in order to recommend the correct grade.

ERTEL ENGINEERING
CORPORATION
S. FRONT ST. KINGSTON, N. Y.

When inquiring check FP 2432 on handy form, pgs. 2-3

REACH HIGH PLACES SAFELY

A Ballymore Safety Step Ladder provides safe, sure footing in high places wherever you need it, prevents accidents and fear of accident.

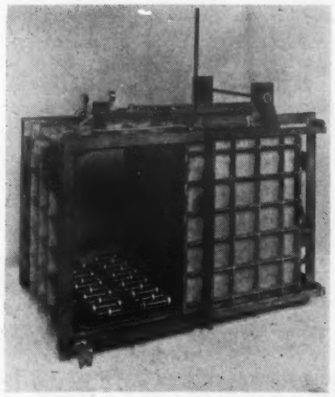
Readily portable on ball bearing casters, but can't roll or kick out when supporting a person . . . weight automatically retracts casters, gives firm 4-point grip by rubber-tipped legs.

All steel construction. Three to eight steps with, one to three steps without, hand rails.

➡ **WRITE TODAY FOR COMPLETE CATALOG**

BALLYMORE COMPANY
WAYNE 19, PA.

When inquiring check FP 2433 on handy form, pgs. 2-3



Inner chamber of pressure unit measures 33" long x 25" wide x 31" high. Skate rails facilitate load movement

controlled, has safety blow-off valves—doors can't open until pressure is released. Quick release pressure valve permits complete depressurizing in a few seconds.

Chamber weighs 2700 lb, occupies space 3½′ x 5½′ x 4′. Can be utilized with any 90 lb shop air line or separate air unit of 8 cu ft.

(Pressure chamber is development of Glasco Equipment Corp., Dept. FP, 12 Wait St., Paterson, N.J. . . . or for more information check FP 2434, pages 2 and 3.)

Application of in-line sampling units

Automatic sampling and its application to different operations are discussed in 12-page bulletin. Specifications, detailed data, charts, and photographs describe various in-line samplers designed for applications where dust is a problem, where headroom is limited, where mixing of sample is required between sample cuts, or where samples are required from points in the concentration circuit. A flowsheet sketch suggests key locations for samplers (wet or dry) throughout the circuit.

Bul Sl-B4 is available from Denver Equipment Company, Dept. FP, P. O. Box 5268, Denver 17, Colorado. When inquiring specify FP, 2435, pgs. 2 and 3.

. . . and for Gentle Drying

Nerco-Niro*

"Gentle" is one word that aptly describes Nerco-Niro Spray Drying. The instantaneous transition of the processed material from liquid to solids involves no harsh sweepers or scrubbers.

Uniform atomization and unique distribution of the drying air result in closely controllable particle size and moisture content.

Nerco-Niro's system allows application of high inlet air temperatures without damage to heat-sensitive products.

Extensive facilities containing both pilot plant and commercial size spray drying installations are now at your service in our new laboratories.

Write for Bulletin No. 226.

Nichols Engineering & Research Corp.
Nerco-Niro Spray Dryer Division
70 PINE ST., NEW YORK 5, N. Y.
1637 N. Illinois St., Indianapolis 2, Ind.
1477 Sherbrooke St. W., Montreal 25, Canada

*Reg. U. S. Pat. Off.

Nerco-Niro . . . the engineered Spray Dryer

When inquiring check FP 2436 on handy form, pgs. 2-3

NEW **Ejectopump**

COMPRESSED AIR OPERATED

No Crushing of Food Products

NO GLANDS

NO BEARINGS

NO MOVING PARTS

Requires no lubrication

Now, a revolutionary new air-operated displacement pump for food processing. Ejectopumps are designed to eliminate *aeration*, *churning* and *crushing* of food products. It is ideal for handling such foods as chocolate, sugar syrup, soup, jam, and vegetables or fruits suspended in liquids. For example, the Ejectopump will handle whole grapes, diced vegetables, peas, carrots and corn *without crushing or damage*.

Maintenance problems are practically eliminated because the Ejectopump has *no rotating or reciprocating parts* . . . no bearings, glands, or revolving shafts . . . which require lubrication. It is easily cleaned.

Unlike other air-operated pumps, the Ejectopump is *self-priming* and is easily installed *above* the level of material to be pumped. No special foundation is needed, because there is no vibration problem.

Available in 1½, 2, 3, 4 and 6-in. sizes.

Designed for easy cleaning

Model B4 and B4 SV Ejectopumps are especially designed for food processing. The top of the casing, header and float can be completely removed in a matter of seconds without spanners. This makes complete cleaning and inspection easy.

Write today for complete details and prices

FERRO

FERRO CORPORATION

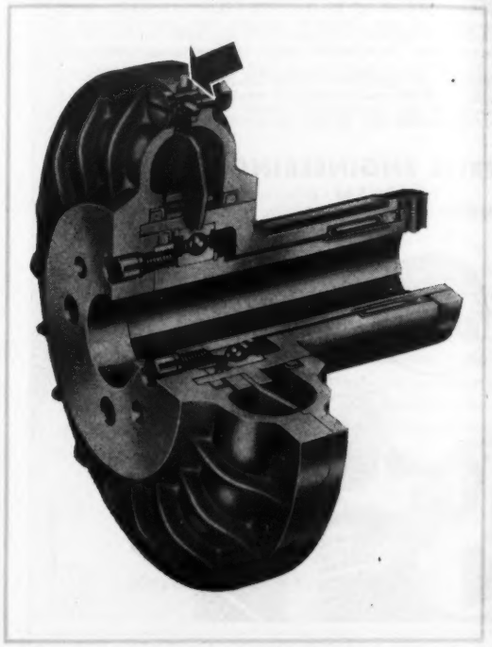
Supplies Division

4183 EAST 56th STREET • CLEVELAND 5, OHIO

When inquiring check FP 2437 on handy form, pgs. 2-3

dry fluid-type drive does not slip at operating load

Low cost, smaller design employs dry "fluid" — small steel shot. Slipping torque easily adjusted to any value up to full rating

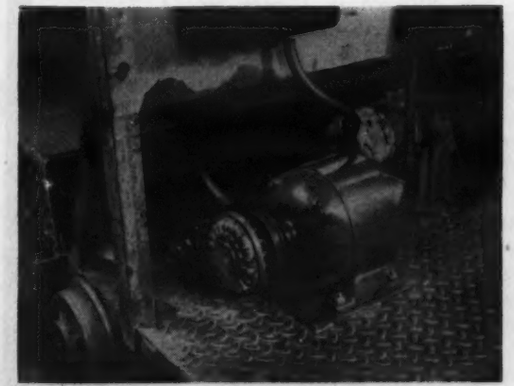


Torque capacity easily varied by changing amount of flow charge. Arrow indicates valve

A revolutionary type of fluid drive is now available for use in this country. The most unique part of the development is the "fluid" it uses. Drive, named Flexidyne, is made up of a housing, inside of which a rotor is free to turn concentrically (see cross-sectional drawing). Between the two are fine particles of spherical steel shot, called the "flow charge", which acts very much like a fluid. It is flow charge which transmits power from housing to rotor. Furthermore, since fluid is dry it is easy to seal in; it has high density, and can stand relatively high temperatures.

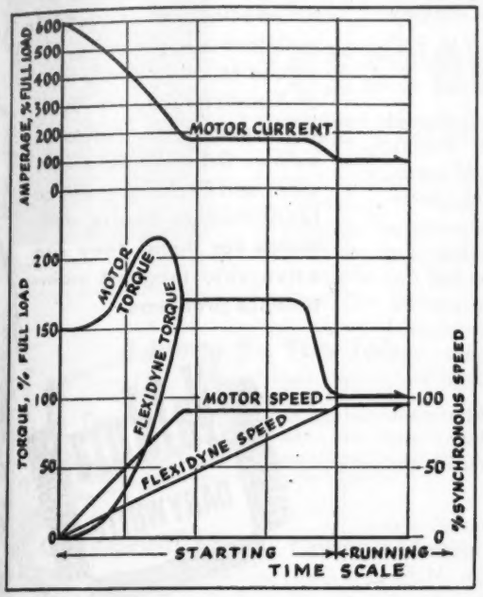
Under normal loads, this dry-fluid drive will not slip. Starting torque never exceeds slipping torque and slipping torque can be easily adjusted to any value up to full rating.

Amount of flow charge determines torque capac-



"Dry-fluid" drive, on foundry cart, picks up power from ¾ hp squirrel cage motor (1150 rpm, 440 v, 60 cycle, 3 phase). Power is delivered through taper-lock V-belt drive and speed reducer mounted on drive-axle

Cart, pushbutton controlled, takes off with its full load as smoothly as elevator. Traveling at 160 fpm, cart can be reversed or inched like an elevator to exact location



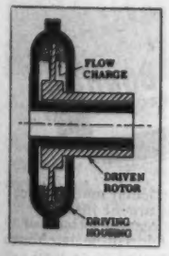
Typical speed-torque curve of standard squirrel-cage motor connected by Flexidyne to load with hard-starting characteristics

ity. Because it is easy to vary amount of charge, drive will give exact starting torque needed for anything from the smoothest to fastest start.

In an accelerated laboratory test, conducted by manufacturer, unit was in operation for the equivalent of 11 years of 8 hr/day severe service. At the end of testing period drive was operating satisfactorily.

(*Continued on next page*)

HOW IT WORKS



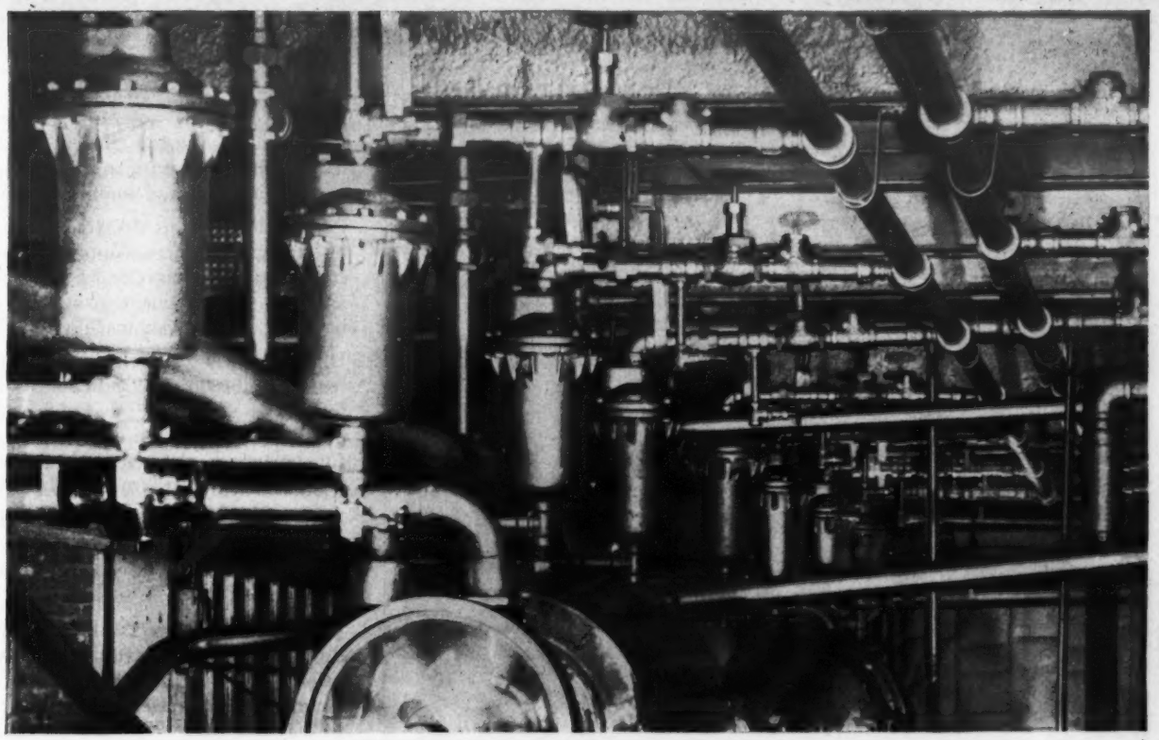
1) Motor is connected to housing, and starts it turning at no load.

2) Flow charge is thrown to circumference of housing, is compressed by centrifugal force, and revolves with housing.

3) Rotor, connected to load, is started and accelerated by friction and wedging action of revolving flow charge.

4) Rotor and housing reach identical speeds—unit operates without slippage between motor and load at normal running speeds.

5) In case of overload, before damage is caused, rotor slips relative to housing, overcoming friction and wedging action of flow charge. Thermal switch is available for shutting off electrical circuit if an overload persists.



How To Increase Production and Still Use Less Fuel!

Problem—Cooking kettles at National Cranberry Company, South Hanson, Mass., couldn't produce enough to supply three recently speeded up canning lines. There was neither enough space nor steam supply capacity to add more kettles. Might there be another answer?

Solution—Mr. Russell Appling, Production Manager, made a very logical move, with everything to gain and nothing to lose. He called his local Armstrong Representative to talk about re-trapping his set-up. The existing traps were replaced with Armstrong 2" No. 216 large vent traps, one on each of the 8 kettles. Additionally, the steam lines were trapped to assure a dry steam supply.

Results—30% more kettle production. A fourth canning line was added to keep up with output. And, fuel consumption dropped 30% despite the production increase!

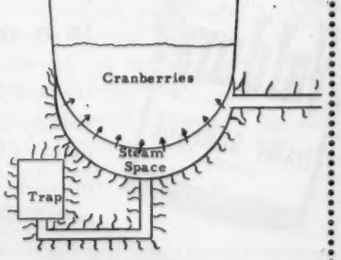
If you want more efficient production, greater return on equipment investment, why not call *your* Armstrong Representative. See your classified phone directory or Thomas Register, or write:

ARMSTRONG MACHINE WORKS
881 Maple Street, Three Rivers, Michigan

Application Engineered **Ask for Steam Trap Book**

ARMSTRONG STEAM TRAPS

HOW A KETTLE CAN GIVE 30% MORE OUTPUT WITH 30% LESS FUEL



Assume that with trap "X", inadequate for the job, cooking time is 10 minutes. During that period heat is radiating (wavy lines) from supply lines, kettle and trap. This non-productive heat loss wastes steam. Now, with an Armstrong trap keeping the steam space free of air and condensate, heat transfer rate is fast and cooking is done in 6 minutes. Thus, four minutes of non-productive radiation loss is eliminated—the faster cooking actually saves steam.

When inquiring check FP 2438 on handy form, pgs. 2-3

NON-TOXIC and MOLD & MILDEW PROOF ...for the *entire life* of the paint film!

VALDURA DAMP SURFACE ENAMEL

...the non-toxic *Cunilate product for both wet and dry surfaces...perfect wherever moisture is a problem and sanitation is a must!**

Available in favored industrial colors. *Trade Name Scientific Oil Compounding Co., Inc.

If you'd like more information about Valdura's Damp Surface Enamel and other items in Valdura's complete line of specialized maintenance products, or if you'd like help with a particular problem, just state your wishes on your regular letterhead and mail to the address below. *Your inquiry will be treated as an invitation to provide service... not as a license to exert selling pressure!*

VALDURA HEAVY DUTY PAINT DIVISION
AMERICAN-MARIETTA CO.
101 E. Ontario St., Chicago 11, Ill.

When inquiring check FP 2439 on handy form, pgs. 2-3

(Continued from preceding page)

Having low initial cost, low maintenance requirements, and giving top efficiency, the drive permits use of smaller motors and controls, with reduced current demands and improved power factor.

Performance of this dry-fluid drive is not affected by changes in surrounding temperature. Smooth starts and gentle overload protection avoid breakage and reduce maintenance on drives, gears, bearings, and driven machinery.

Unit presently available in four sizes, rated at 3 to 30 hp at 1800 rpm. Other smaller sizes will follow. Two lines are available—(1) drives for mounting directly on motor shafts and adapted for taper-lock sheaves, and (2) couplings with taper-lock bushings for straight line drives.

Drives have found use on such equipment as compressors, centrifuges, conveyors, crushers, and other installations involving heavy inertia and shock loads.

(Designed and successfully used in France, this dry fluid drive — Flexidyne — was engineered to meet US industrial standards by Dodge Manufacturing Corp., Dept. FP, 2400 Union Street, Mishawaka, Ind. . . . or for more information check FP 2440 on handy form, pages 2 and 3.)

Eliminates hand cleaning of tanks on trucks

Mobile, recirculating tank washer reduces operation to 20 minutes

Uses: Cleaning milk and other truck tanks by recirculation of cleaning solution.

Features: Mobile unit eliminates hand operation, thereby reducing cleaning time to about 20 minutes. Eliminates surface scratches often caused by hand washing (scratches can be accumulation points for bacteria and milkstone). Incorporates

Recirculating tank washer was tested for over a year with completely satisfactory cleaning and no milkstone accumulation

The VALDURA name stands for a complete line of specialized industrial maintenance products designed to serve every type of American industry. Typical products are indicated below. Other Valdura Specifics and Exclusives will be identified in future ads. Watch for them! They can solve your toughest maintenance problems.

Darywhite Enamel — devised originally for the dairy trade has become the standard for sparkling whiteness and durability wherever there is need for a heavy duty white enamel. It is non-yellowing, mold and mildew inhibitive, and unusually resistant to water and abrasion.

Moist-Bond Enamel — the enamel which "drinks water"—is made with a special moisture-tolerant vehicle for painting over surfaces which are wet with surface moisture. It provides a perfect bond and a porcelain-like finish, and is resistant to mold and mildew.

In white only

If you have a particular maintenance problem which is urgent just describe it on your regular letterhead and mail to the address below. Your inquiry will be treated as an invitation to provide service . . . not as a license to exert selling pressure!

VALDURA HEAVY DUTY PAINT DIVISION
AMERICAN-MARIETTA CO.
101 E. Ontario St., Chicago 11, Ill.

When inquiring check FP 2441 on handy form, pgs. 2-3

Model L60-V with Vacuum Breaker and Check Valve for protection against siphoning.

Steam-sterilize your cans with a CHERRY-BURRELL "BESTOV" can rinser

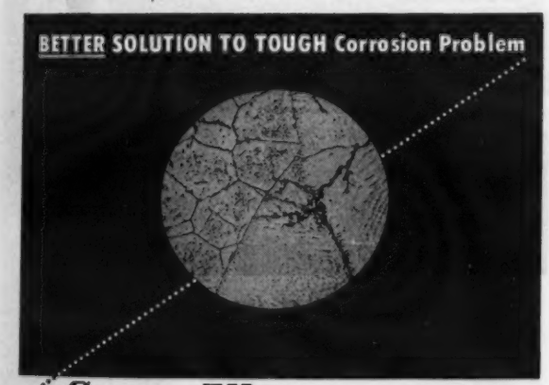
For a fast, thorough rinsing and sterilizing of waste cans and mixing containers up to 20" diameter, you can't beat a Cherry-Burrell triple-rinse "Bestov" Can Rinser.

3 Steps Do The Job

1. *Invert Can* on "Bestov" Rinser, step on cold water pedal. Blast of water removes most of waste.
2. *Press Hot Water Pedal* to mix steam and cold water. Hot water rinse loosens, removes all waste.
3. *Step on Steam Pedal.* Steam shoots through spray nozzle, sterilizes can, removes all odors.

CHERRY-BURRELL CORPORATION
427 W. Randolph Street, Chicago 6, Ill.
Equipment and Supplies for Industrial and Food Processing
FACTORIES, WAREHOUSES, BRANCHES, OFFICES OR DISTRIBUTORS AT YOUR SERVICE IN 57 CITIES

When inquiring check FP 2442 on handy form, pgs. 2-3



Carpenter 7Mo Stainless Tubing & Pipe

This photomicrograph may help you solve *stress corrosion cracking* problems. It shows Carpenter 7Mo Stainless Pipe (left) welded to a Type 316 fitting. Note how corrosion-inviting cracks in fitting (right) stop at interface of pipe. The 7Mo pipe had outlasted *three* such fittings before the picture was made because of its stout resistance to stress corrosion cracking, even in the presence of chlorides or other caustic and sulphite solutions. It also offers excellent resistance to general corrosion and pitting, and to oxidation up to 1900°F. Food and chemical processing plants, pulp mills, oil refineries and other industries have found that Carpenter 7Mo Tubing and Pipe are *cost-saving* "problem-solvers". They may belong in your plant, too. Write for Technical Bulletin containing comprehensive data on Carpenter 7Mo.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, New Jersey

When inquiring check FP 2443 on handy form, pgs. 2-3

cleaning head which is placed in tank interior by fastening to manhole. Cleaning head revolves by pressure of pump and has jets so that entire inner surface is reached by solution.

Description: Unit consists of circulating pump and 50-gal supply tank mounted on caster-supported frame. Parts in contact with liquid are stainless steel or Tygon. Pump is 3 hp for ordinary usage, fittings are 2".

(Model RTT55 Recirculating Milk Transportation Tank Washer is manufactured by Girton Manufacturing Co., Dept. FP, Millville, Pa. . . . or for more information check FP 2444 on handy form, pages 2 and 3.)

Issues 1955 directory of safety posters

Directory of occupational safety posters contains 72 pages showing reproductions of available posters. Included in this directory are 744

of the miniatured posters. Price list, instructions on how to use posters most effectively, and order forms are included. Illustration above is reproduction of safety poster 9124-A.

(Directory is available by remitting 50c to National Safety Council, Dept. FP, 425 N. Michigan Ave., Chicago 11, Ill.)

A LEADING FACTOR to the profitable operation of the food warehousing property shown here is the ENGINEERED "Automatic" Sprinkler PROTECTION which stands guard against fire twenty-four hours every day of the year. With a property valuation in excess of a million dollars, "Automatic" Sprinklers are truly the management's Silent Partners — earning increased profits from insurance savings.

Of course, money-saving is not the only reason for investing in fire protection, and for that reason each installation which we make is based upon a careful survey of your property. If your problem is unusual, we work it out in our laboratory and testing facilities. In that way we are able to design, engineer, install and assure you of the best in fire safety with "Automatic" Sprinklers. They're an important investment today . . . perhaps welcomed protection tomorrow!

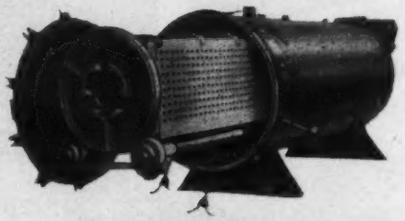
"Automatic" Sprinkler
CORPORATION OF AMERICA
YOUNGSTOWN, OHIO

Offices in principal cities of North and South America.

When inquiring check FP 2445 on handy form, pgs. 2-3

TO OBTAIN BETTER RETENTION OF FLAVOR, COLOR, VITAMINS, ETC.

Use



BERLIN-CHAPMAN

Sterilizer

To obtain better retention of flavor, color, and vitamins, the BERLIN CHAPMAN Sterilizer is widely used by the largest packers of food in the United States . . . originally designed for evaporated milk, hundreds of these machines that have been in use for over twenty-five years are still performing satisfactorily. Usually set up in a battery of 4 or 5 for one line of food at 120 cans per minute . . . made in three sizes to hold thirty, twenty, or fifteen cases of tall cans . . . equipped with one cage, one cage truck and one set of 96 trays . . . all shells are tested to 40 lbs. hydraulic pressure for working pressures up to 20 lbs. Also ASME code stamping.

In operation, the cans are placed in the revolving cage so that they will agitate end-over-end continuously during the cooking period. Cans are first pressure-cooled after cooking, then cooled to atmospheric pressure, all in the sterilizer. The cage revolves slowly at a rate of 16 r.p.m., but the speed of cage may be as low as 5 r.p.m.

Write today for complete information and recommendations of size sterilizer to meet your plant requirements. If you do not have the latest complete BERLIN CHAPMAN catalog on food processing machinery, ask for a copy of it also.

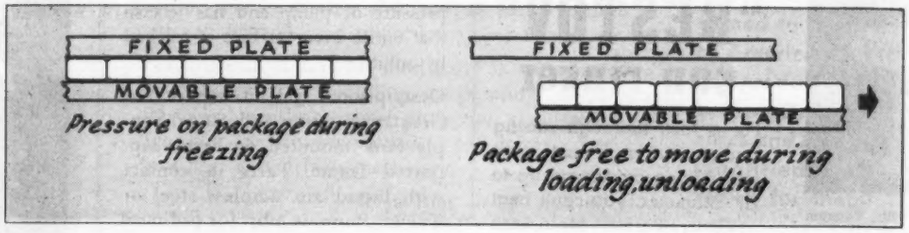
Other Berlin Chapman Equipment

- Vertical Retorts
- Brine and Pulp Tanks
- Belt Conveyors
- Shaker Graders
- Rod De-watering Reel
- Rotary Washers
- Scalders
- Blanchers
- Separators
- Special Machinery for Food Processing

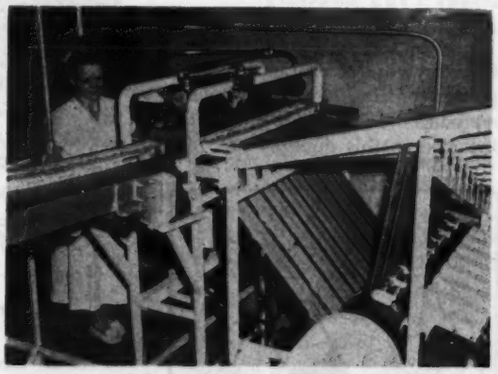
Since 1909

BERLIN CHAPMAN CO
BERLIN · WISCONSIN

When inquiring check FP 2446 on handy form, pgs. 2-3



efficient plate freezer engineered for continuous operation

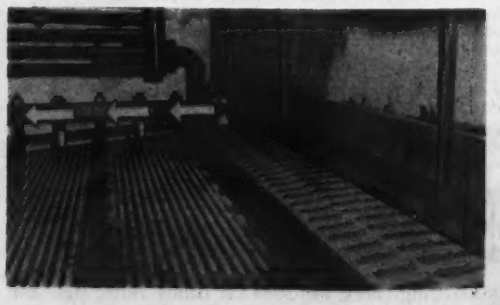


Continuous line of packages from wrapper, feeds in across counting table and operates limit switch located at end of line. Here, limit switch has just operated; packages move as shown in photo at right

Operator observing inclined conveyor belts which carry packages to eight loading levels

Loading chariot and entrance ports (arrow). Behind chariot is the counting table. Right foreground is 10 hp motor and hydraulic system

View inside continuous plate freezer. All 8 movable plates have just moved forward and down slightly (see arrow) to receive 8 incoming rows of 35 packages each. Successive cycles move packages forward into area between plates



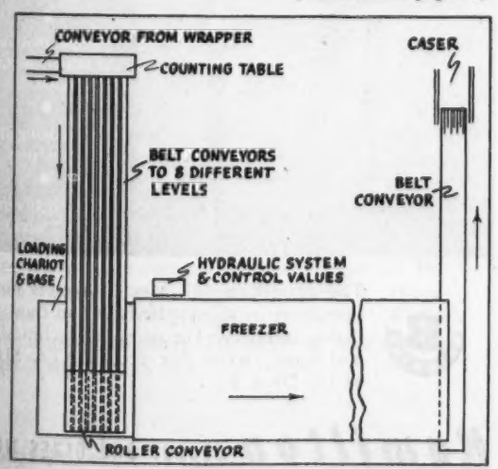
Process up to 9000 retail packages/hr at Shoreland Freezers, Inc.; direct contact, top and bottom, during freezing; pressure released during intermittent movement

Newly developed continuous plate freezer, which combines straight flow production with simplicity of operation, has enabled the Shoreland Freezers, Inc., Salisbury, Maryland, to reduce power and labor costs, provide uniform shaped packages of minimum size, and give fast freezer cycle which results in better quality merchandise. Freezing up to 9000 retail packages per hour, unit has fixed and movable plates which provide pressure on package during freezing and releases pressure during movement of packages. Incorporating its own casing machine, plate freezer provides a continuous flow of packages from the wrapping machine to the shipping case.

The key to machine's effectiveness is eight-tier freezing level arrangement, with an upper and lower plate to each. Design provides approximately 2000 sq ft of refrigerated surface contacting the packages, plus another 2000 sq ft on the opposite or off-contact side of the plates. Plate surface temperature is approximately the same as refrigerant temperature — minus 40°F. In an air blast tunnel, by contrast, a refrigerant temperature of minus 40°F generally produces an air temperature for freezing of minus 25°F.

Machine has capacity for 14,000 standard size retail packages. A package 1⅜ inch thick moves through in one hour and thirty minutes. This time compares with blast tunnel type method which requires 3 to 4 hr, plus handling time. By adjusting

(Continued on page 85)



Flow diagram of continuous plate freezer at Shoreland Freezers, Inc.

NEW TYPE STURTEVANT AIR SEPARATOR

Recovers Fines in Micron Ranges

Now the famous Sturtevant Whirlwind Air Separator, so widely used throughout industry for fast recovery of fines, has been specially designed to "pick-off" classified materials such as pigments, limestone fillers, plastics, oyster shells, etc., in micron sizes.

These highly efficient air separators select a continuously uniform product of desired fineness. Used in a closed circuit with grinding mills, they increase production, cut power costs.

Large feed opening, rugged construction, ease of adjustment, low power consumption assure economy of operation and minimum upkeep. Write for further information.

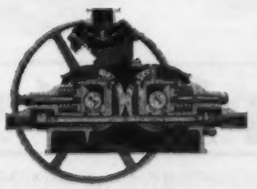
STURTEVANT MILL COMPANY
122 CLAYTON STREET
BOSTON 22, MASS.

Designers and Manufacturers of:
CRUSHERS • GRINDERS • SEPARATORS
CONVEYORS • MECHANICAL DENS and
EXCAVATORS • ELEVATORS • MIXERS

OTHER STURTEVANT EQUIPMENT

MICRONIZER® GRINDING MACHINE
A fluid jet grinding machine, the Sturtevant Micronizer speeds reduction of materials to low micron sizes. These jet mills are especially applicable in fields where a particle size in microns is desired.
Sturtevant Micronizer grinding machines are available in many sizes and capacities.

RING-ROLL MILLS
For medium and fine reduction (10 to 200 mesh), hard or soft materials. Very durable, small power. Operate in closed circuit with Screen or Air Separator. Open door accessibility. Many sizes. No scrapers, plows, pushers, or shields.



CRUSHING ROLLS
For granulation, coarse or fine, hard or soft materials. Automatic adjustments. Crushing shocks balanced. For dry or wet reduction. Sizes 8 x 5 to 38 x 20. The standard for abrasives.

BLENDER
Four-way mixing action assures a thoroughly blended product. Open-door accessibility permits easy cleaning. Available in many mixing capacities for ¼-ton per hour and up.

When inquiring check FP 2447 on handy form, pgs. 2-3

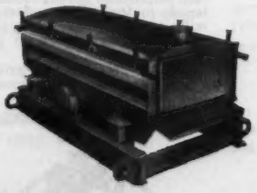
See us at Booth 2032-2034 Materials Handling Exposition, Chicago, May 16th to 20th.

4,000 lbs. of beans an hour

dewatered by this 3′x6′ Simplicity Screen

This 3′ x 6′ Model "C" SIMPLICITY Single Deck Dewatering Screen, operating with 11-mesh screen wire, dewaters sliced beans at the rate of 4,000 lbs. per hour at the Scottville, Michigan plant of Stokely-Van Camp, Inc., one of the world's largest food processing companies. In the complete processing operation, whole beans are fed through a cutter onto a shaker which separates the seeds and delivers sliced beans to a surge tank. From the tank, the product is pumped to a second floor sluiceway that empties onto the Simplicity Screen where water is removed at the rate of approximately 350 gallons per minute. Simplicity Screens, available in capacities to suit your food processing operations can help reduce costs, increase production and improve the quality of your food products.

SIMPLICITY Screens for tomato processing operations give you up to 50% more capacity and cut cleaning time to 15 minutes. Richer products result because every ounce of juice and pectin is removed from every tomato. Consult a Simplicity sales representative or write today for complete information.



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TRADE MARK REGISTERED

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Sales representatives in all parts of the U.S.A.

FOR CANADA: Simplicity Materials Handling Limited, Guelph, Ontario
FOR EXPORT: Brown and Sites, 50 Church Street, New York 7, N. Y.

148

When inquiring check FP 2448 on handy form, pgs. 2-3

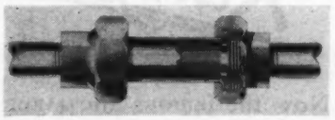
processing

Straight line strainer protects equipment

Eliminates unnecessary friction, loss, and turbulence

Uses: To provide clean unrestricted flow of fluids or gases within supply line. Protects appliances, equipment, valves, and controls.

Features: Construction eliminates unnecessary friction loss and turbulence. Strainer is installed right in the line using union couplings.



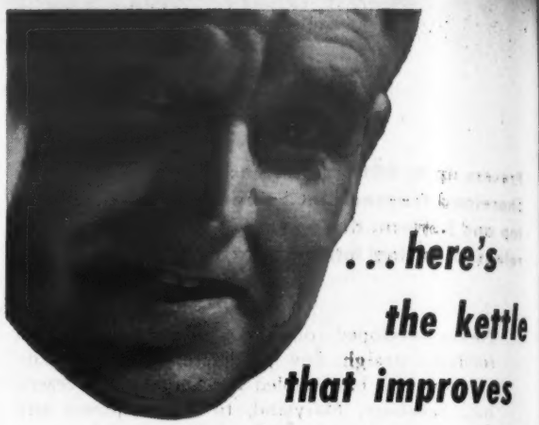
Strainer is easy to install, service

Description: Strainer has large screening area in relation to supply line size, with union connections that make it easy to install, service, and clean. All parts are non-corrosive. Available in ¼, ⅜, ½, ¾, and 1 inch pipe sizes. ("Straitflo" strainer is a product of Hays Manufacturing Co., Industrial Sales Div., Dept. FP, 814 W. 12th St., Erie, Pa. . . or for more information check FP 2449 on convenient Reader Service slip to be found between pages 2 and 3.)

Treated floor lends safety to storage rooms

Plant safety can be augmented by use of iron aggregate floor surfacing. Twelve-page bulletin lists properties as static-disseminating, spark-resistant, non-combustible, and wear-resistant. Material is applied as a dust-coat or shaken on freshly floated concrete.

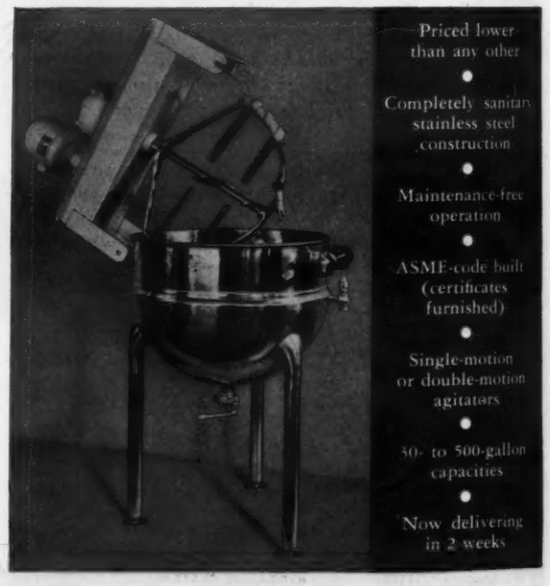
Bulletin No. 38 is issued by the Master Builders Co., Dept. FP, 7016 Euclid Ave., Cleveland 3, Ohio. When inquiring specify FP 2450 on convenient Reader Service slip to be found between pages 2 and 3.)



. . . here's the kettle that improves your product

The HAMILTON CG MIX COOKER incorporates all possible sanitary features for the utmost protection of your product's quality, color, and flavor. Precision-made cut gears give vibrationless operation. Counter-rotating shafts assure maximum circulation.

check these features



- Priced lower than any other
- Completely sanitary stainless steel construction
- Maintenance-free operation
- ASME-code built (certificates furnished)
- Single-motion or double-motion agitators
- 30- to 500-gallon capacities
- Now delivering in 2 weeks

The Hamilton CG Mix Cooker is now in operation in many plants in the food processing industry. For complete technical data and costs, write for free DATA SHEET H-14, Dept. F

Hamilton copper and brass works
Division of the Brighton Copper Works, Inc. • 820 State Ave., Cincinnati, Ohio

When inquiring check FP 2451 on handy form, pgs. 2-3

(Continued from page 83)

screw on each of four cam tracks, freezer can handle packages ranging from 7/8 to 2¼ inches in thickness.

The continuous freezer consists of four major sections: 1) the infeed, 2) plate freezer, 3) package discharge, 4) package caser. With the exception of belt infeed for freezer and belt infeed for caser, freezer is hydraulically operated and electrically timed to produce continuous operation (see diagram on page 83).

Infeed section, located outside of refrigerated room, delivers filled packages of fruits or vegetables in a single line to a counting and distributing station (see photos). At this point, packages are transferred to conveying belts which carry packages to 8 loading levels. When 280 packages have accumulated in front of freezer, they are pushed into freezer as plates open up. Movable plates (see diagram on previous page) are mounted in a common frame supported on four wheels which roll on cam tracks. It is forward and backward movement of this frame on cam tracks that opens and closes the space between fixed and movable plates. Curbed edge on holding plates prevents packages from moving back when plates close. Packages are in contact with both plates during freezing, but there is no pressure on package as they move intermittently through continuous freezer.

When freezer is completely filled, each new incoming line forces a line of frozen packages to discharge on each of the eight levels. Frozen packages are then conveyed out of refrigerated room to belts that feed automatic caser. After leaving refrigerated room, packages converge into four levels in order to case four packages high.

Problem of defrosting has been virtually eliminated. Packages enter freezer through openings that are air conditioned to reduce infiltration of moist, warm air and thereby reduce frost formation on off-contact side of plates. Movement of packages over contact surfaces helps keep them clean.

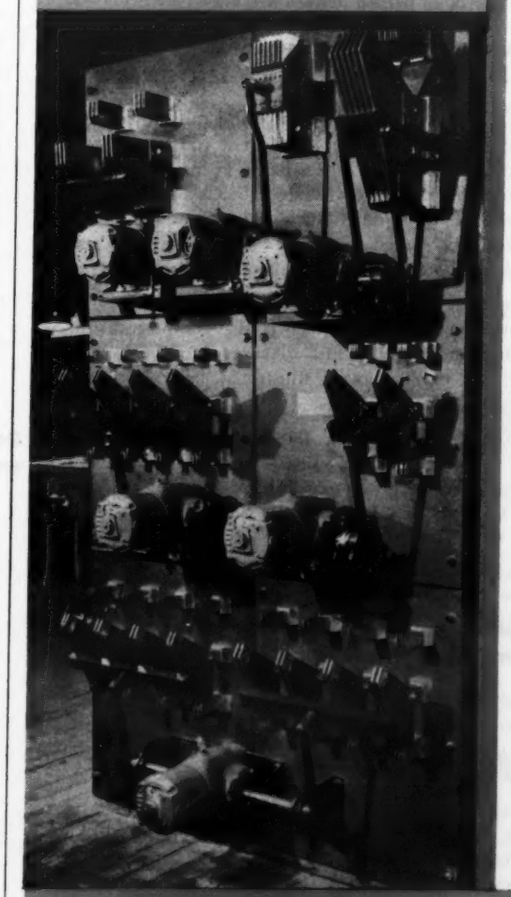
According to President R. M. Cooley, Shoreland Freezers, Inc., labor costs have been reduced because the package is not touched by human hands after being fed into wrapping machine. Power costs have been cut since freezer operates on 10 hp motor. Furthermore, unit produces a package better suited for handling, for stacking in storage as well as retail market.

(Continuous plate freezer is a development of Patterson Freezer Corp., Dept. FP, Parkway House, Parkway at 22nd, Philadelphia 30, Pa. . . . or for more information check FP 2452 on handy form, pages 2 and 3.)

NEXT MONTH

read about mobile photoelectric unit for automatic sorting of dried beans, peas, peanuts

Geared for smooth, slow speed



SIX Century Performance-Rated® GEAR MOTORS

power this remote controlled Automatic Switch. These gear motors are ⅓ H.P., 5 r.p.m., right angle shaft.

Whatever your slow speed needs . . . from 4.3 to 780 r.p.m. . . . Century Gear Motors provide compact, quiet-running units hardly larger than conventional motors . . . in ratings from ⅛ to 150 H. P.

For quiet, dependable service, helical gears with "rotational tooth contact" help prevent uneven wear and minimize vibration. Extra-width pinions provide strength for greater shock load resistance and longer life.

Tapered roller bearings enable the gear shafts to withstand radial and thrust loads without strain on the motor. Oil tight shaft seals make these motors particularly adaptable to shaft-down mountings on processing jobs where contamination is a problem.

Whatever the speed and power characteristics you need . . . AC or DC . . . Century Motors are Performance-Rated to do the job with top efficiency. For information, call your nearby Century Sales Office or Authorized Distributor.

Parallel shaft, single reduction . . . 280 to 780 r.p.m. . . . ⅛ to 150 H.P.

Right angle shaft, single reduction . . . 25 to 280 r.p.m. . . . ⅛ to 3 H.P.

Parallel shaft, double reduction . . . 37 to 280 r.p.m. . . . ⅛ to 150 H.P.

Parallel shaft, triple reduction . . . 7.5 to 37 r.p.m. . . . 1 to 150 H.P.

Right angle shaft, double reduction . . . 4 to 84 r.p.m. . . . ⅛ to ¼ H.P.

Performance-Rated® Motors ⅛ to 400 H. P.

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When inquiring check FP 2453 on handy form, pgs. 2-3

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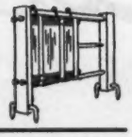
for FREE Bulletins on CP Processing and Refrigerating Machines

☐ **CP CRESCENT PLATE HEAT EXCHANGERS**

Heat, cool, pasteurize all fluid products continuously



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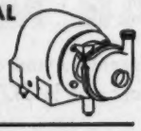
Handle both fluid food products and cleaning solutions



☐ **CP AMMONIA COMPRESSORS AND BOOSTERS**

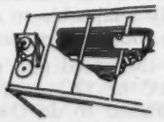
Engineered refrigeration for cooling, freezing and storage

☐ **CP MULTI-FLO HOMOGENIZER**

Consistent results with minimum maintenance

☐ **CP CHILLED WATER PRODUCER**

Produces chilled water for cooling



☐ **CP STAINLESS STEEL PROCESSING TANKS**

Heat—cool—mix and store

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267 King Street, W., Toronto 2B, Ontario

When inquiring check FP 2454 on handy form, pgs. 2-3

NEW LITERATURE

Reviews of books and industrial bulletins describing equipment, supplies, services

Manufacture of compound feeds told in British volume

Detailed description of compound milling process and the machines employed in it constitutes substance of this book. Specializing in manufacture of compound feeds for livestock, book also includes associated subjects, such as manufacture of "straights", seed cleaning, grass grinding and cubing, cereal flaking, poultry corn processing.

Initial three chapters are general discussions of animal nutrition, various feeds, composition of compound rations, and advantages of cubes and pellets. Book is well illustrated by nearly 200 diagrams and photos.

"Compound Milling", 280 pages, can be obtained by remitting 42s. ($5.88) plus 1s. 4d. (19c) postage direct to Leonard Hill Limited, Dept. FP, 9 Eden St., London N.W. 1, England.

Stabilizer colloids of plant origin reviewed comprehensively

Reviews of all important stabilizers of plant origin are presented in 104-page book issued by American Chemical Society. Book is collection of papers given at ACS symposium in 1953.

Papers are primarily summaries of current status of particular hydrocolloids. Specific colloids discussed include calcium pectinates, agar, gum arabic, gum karaya, tragacanth, guar gum, locust bean gum, algin, Irish moss, and others.

No. 11 of Advances in Chemistry Series, "Natural Plant Hydrocolloids", can be obtained by remitting $2.50 direct to Special Publications Dept., American Chemical Society, Dept. FP, 1155 Sixteenth St., N.W., Washington 6, D. C.

Outlines five vital steps to productive maintenance

Increased mechanization places great responsibilities on the maintenance workers. A guide to aid those with such duties has been prepared by a manufacturer of poultry equipment. Its highly practical approach makes it equally helpful to maintenance in other food plants. Program outlined shows how to get more production from each machine, make work flow smoother. Brief discussion tells how to set up and carry through on each step in the plan. Gathering data, determining extent of routine maintenance, establishing routine operating control system, and a critical maintenance plan are all covered.

"Five Steps to Productive Maintenance" is issued by Gordon Johnson Co., Dept. FP, 2519 Madison St., Kansas City 8, Mo. When inquiring specify FP 2455 on handy form, pages 2 and 3.

Describes current status of work on dehydrated egg stability

Subject of recent Quartermaster Food & Container Institute symposium was stability of dehydrated eggs. Papers discussing current status of research and pointing out present problems, plus discussions which followed presentation of papers are included in 100-page proceedings.

Two main subjects of discussion are an evaluation of the acidified and glucose-free types of eggs, and specific problems encountered with the Salmonella organism.

"Stability of Dehydrated Eggs" can be obtained from the Quartermaster Food & Container Institute for the Armed Forces, Dept. FP, 1819 W. Pershing Rd., Chicago 9, Ill.

Pack concentrated liquid cleaner in drums with plunger dispenser

Seven features of a recently developed concentrated liquid cleaner are described in a 4-page illustrated bulletin. Product is designed for use on such surfaces as stainless steel, enamel, aluminum, tin, glass. It is as safe for all such materials as plain water.

Neutral pH and non-slip character add to its usefulness. Recommended proportion for many applications is 1 oz to 15 gal of wash solution. Packed in 10 gal drums furnished with calibrated dispenser to deliver exact amount — 1/3, or 1 oz.

Bulletin on Tig liquid cleaner is issued by The Diversey Corp., Dept. FP, 1820 Roscoe St., Chicago, Ill. When inquiring specify FP 2456.

Heavy duty conveyor designed for bags, boxes, cartons

Sectional conveyors are made in 20′ lengths for transporting bags and boxes. Drive sections and driven sections interlock to provide desired length. Illustrated 4-page folder gives dimensions and specifications. Conveyors come in 18 or 24″ belt

widths, are designed for fixed horizontal conveying, can be adapted for portable or inclined service.

Bulletin 1554, "Saco Sectional Bag Conveyor", is issued by Stephens-Adamson Co., Standard Products Div., Dept. FP, 11 Ridgeway Ave., Aurora, Ill. When inquiring specify FP 2457 on handy form, pages 2 and 3.

Booklet outlines training programs for plant, supervisory employes

Practical pointers on training employes are offered in a 12-page booklet, with emphasis on both plant and supervisory personnel. Such subjects as when to train, who should be trained, what to teach, and who should do the training are all explained in detail. Many helpful suggestions are made as to planning and analyzing methods of presentation to workers.

Included is a check sheet for job analysis in relation to the worker, what he has been able to do, and what he has to know to do it.

"How to Train" is issued by Wheeler Associates, Inc., Dept. FP, 15017 Detroit Ave., Cleveland 7, Ohio. Check FP 2458, pages 2 and 3.

Automatic breader can handle about 2000 lb/hr meat, fish, poultry

Single page bulletin describes automatic breader and batterer for use with meat and fish products. Unit occupies floor space 8½′ x 5′, has 34″ wide belt, has maximum capacity of approximately 2000 lb/hr, depending on product. Construction is stainless steel in product zone, with wingnuts or thumbscrews throughout for easy disassembly and cleaning.

Bulletin No. 54-4 is issued by J.W. Greer Co., Fry-O-Pac Div., Dept. FP, Wilmington, Mass. Check FP 2459, pages 2 and 3.

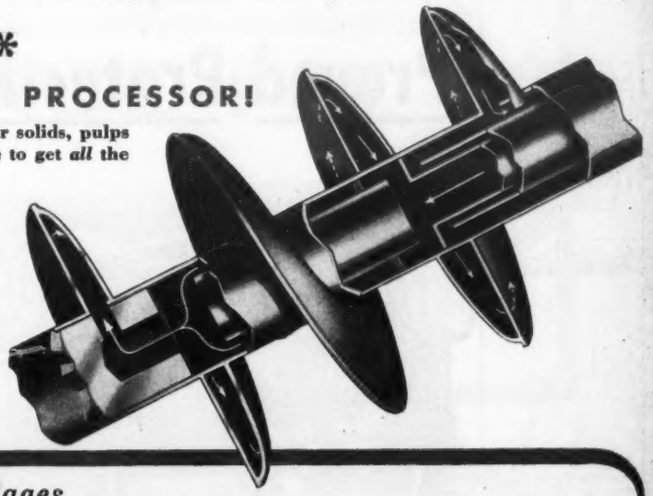
if you have a Cooling...Heating...or Drying problem

investigate the revolutionary advantages of...

THE holo-flite* PROCESSOR!

If you have processes where slurries, granular solids, pulps or pastes are cooled, heated or dried, be sure to get *all* the facts on HOLO-FLITE advantages.

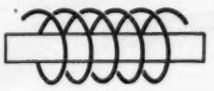
HOLO-FLITE handles such processes — *in continuous flow* — in as little as 1/5th the space of other types of heat exchangers. What's more, it is readily adaptable to a wide range of applications — is simple to install and maintain — and provides many other important savings.



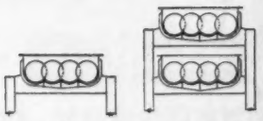
typical HOLO-FLITE *advantages...*

ITS APPLICATION FLEXIBILITY is almost unlimited. It cools, heats, or dries. It handles granular solids, pulps, pastes, slurries and fluids with equal ease. Its heat transfer agent can be water, refrigerant, hot oil, Dowtherm, steam or other liquids or vapors at any of a wide range of temperatures. It cools materials in ranges from 1800°F to 0°F. It heats and dries with hot oil to 600°F...with Dowtherm to 750°F...with steam to 150 lbs. per sq. in. pressure.

THE LARGE HEAT-TRANSFER SURFACE saves space — HOLO-FLITE requires as little as 1/5th the space of other heat-exchange equipment of comparable capacity. Moreover, a more complete heat transfer is effected, resulting in more uniform processing.



ROTATION IS SLOW — granular and powdered solids are handled with practically no dusting — negligible abrasion. There are no dust recovery problems — a further saving in installation, maintenance and operating costs!



ITS OPERATING CAPACITY is readily adaptable to virtually any requirements by simply varying the diameter, pitch, and length of flights, as well as the number of "tiers." Multi-tier units require no more floor space than single-tier installations!

HOW HOLO-FLITE WORKS...

Basically the HOLO-FLITE consists of one or more flights of hollow-bladed screw conveyors. The product to be processed moves through a trough housing the conveyor screws. The heat-transfer fluid circulates through the hollow blades and shafts of the conveyor. The product is constantly rotated into, around, under and over the blades and shafts through which the heat-transfer fluid is circulating, assuring quick, uniform heat passage between the two mediums — *as the product is continuously moved along in a bulk-flow without interruptions!*

GET THE COMPLETE FACTS on Holo-Flite savings and how this field-proven unit can save space, time and money on your processing operations. This eight-page descriptive bulletin will gladly be sent on request. No obligation, of course!

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When inquiring check FP 2460 on handy form, pgs. 2-3

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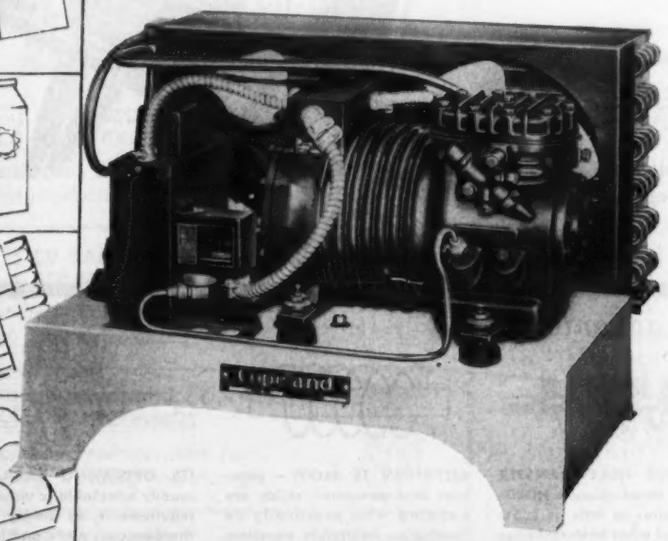


COPELAMETIC

THE *Accessible* HERMETIC

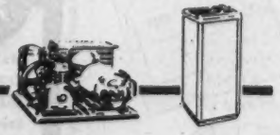
For pre-cooling, freezing or storage, many large processors depend on practical COPELAMETIC refrigeration units. In an industry where low-cost operation and continuous unfailing performance are vital, COPELAMETIC has earned top recognition.

Copeland's design leadership has drastically reduced maintenance, by eliminating all belts, seals, and manual oiling from COPELAMETIC. And Copeland added accessibility! Should the rare need arise, the unit can be serviced instantly, on the spot. No unnecessary shutdowns, no sending back to the factory.

COPELAMETIC runs, quietly, economically . . . gives consistent high BTU for minimum cost. There are self-contained and remote units for every application.

WRITE FOR BULLETIN C-54

Copeland
DEPENDABLE Electric REFRIGERATION



COPELAND REFRIGERATION CORPORATION • SIDNEY, OHIO

When inquiring check FP 2461 on handy form, pgs. 2-3

new literature

Statistical survey of packaging industry

Forty-four page report on containers and packaging, issued by the US Department of Commerce, reviews the manufacture and shipment of all types of packaging materials and packages for food and other industries. Major emphasis is upon food packages.

"Containers and Packaging, Industry Report," is published four times a year. Subscriptions are $0.60 per year submitted to the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

Explains control of boiler blowdown

Principal kinds of boiler blowdown are discussed in 8-page technical paper. Also covered are various control methods necessary to assure production of pure steam and keeping of heat transfer surfaces free of scale and other objectionable deposits.

Technical Paper No. 128 is available from W. H. & L. D. Betz, Dept. FP, Gillingham & Worth Sts., Philadelphia 24, Pa. When inquiring specify FP 2462 on handy form, pages 2 and 3.

Floor upkeep problems fully illustrated

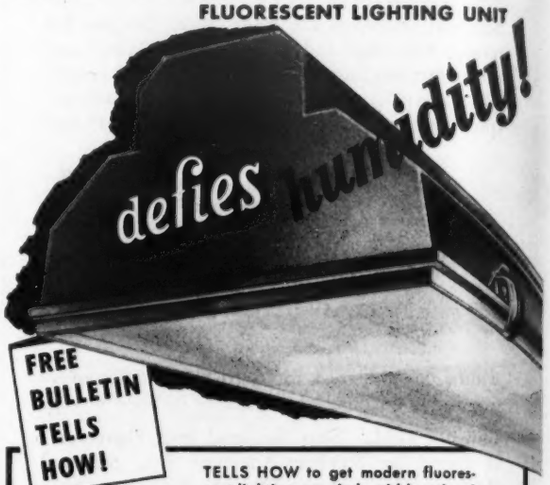
Illustrated 24-page brochure discusses floors and floor maintenance. Subjects discussed include various types of floors, how they are built, deterioration factors, and treatment of floor troubles.

"Floors and Floor Problems" can be obtained from the Tremco Manufacturing Co., Dept. FP, 8701 Kinsman Rd., Cleveland, Ohio. Specify FP 2463 on handy form, pages 2 and 3.

SOLVE HUMID LOCATION LIGHTING PROBLEMS

BENJAMIN "VAPOR-TITE"

FLUORESCENT LIGHTING UNIT



FREE BULLETIN TELLS HOW!

TELLS HOW to get modern fluorescent lighting even in humid locations!

1. Easy-in, easy-out lamp servicing despite humidity with exclusive "Springlox" lampholders.
2. Solid armor of Porcelain Enamel keeps out moisture.
3. One-piece housing, no cracks or crevices.
4. More light because of 85%-or-higher reflection factor.

for your free copy of Bulletin AD5929, write Benjamin Electric Mfg. Co., Dept. QQ, Des Plaines, Illinois

When inquiring check FP 2464 on handy form, pgs. 2-3

SAVE 50% on ROOF REPAIR

FREE BOOK SHOWS HOW 90% of Leaky Roofs Can be Saved

Cut Costs in HALF with Unskilled Labor

There are no secrets or special skills to good roof repair! Free step-by-step book shows exactly how to recondition roofs . . . to give 90% of leaky roofs extra years of weather-tight life . . . to do the job right with unskilled labor at HALF the cost. Your business letterhead request brings "Saving Old Roofs" free. Write today!

TROPICAL PAINT COMPANY

1130-1280 W. 70th • Cleveland 2, Ohio

HEAVY DUTY MAINTENANCE PAINTS SINCE 1885

When inquiring check FP 2465 on handy form, pgs. 2-3

Stop acid or alkali Corrosion

with GARLAND'S ACANAL

ACANAL is Garland's new coating that protects from the corrosive action of acids, alkalis, fruit juices, salts, petroleum products or alcohol. Paint it on tanks, chemical equipment, piping, machinery, structural steel, air ducts, trucks, floors or walls where a chemical resistant coating is required.

ACANAL forms a tough flexible plastic skin that won't oxidize or chemically deteriorate. Where other paints have failed, ACANAL has shown excellent adhesion and resistance to abrasion, fumes and chemical spillage. Non-toxic, won't impart flavors to food or beverages after it has dried.

Send our laboratory your special problem

Solving Paint, Roof and Floor Maintenance Problems since 1895

Ask for folder A 450

THE GARLAND COMPANY

Dept. FP-4 Cleveland 5, Ohio.

When inquiring check FP 2466 on handy form, pgs. 2-3

SPRAY NOZZLE REFERENCE MANUAL

write for your free copy today

- to help you improve a spraying operation
- to help you lower a spraying cost

The most complete industrial spray nozzle catalog ever produced. Gives you reference data on thousands of standard and special spray nozzles for every type of spraying.

WRITE FOR your free copy of Catalog No. 24

SPRAYING SYSTEMS CO.

3213 Randolph St. Bellwood, Illinois

When inquiring check FP 2467 on handy form, pgs. 2-3

new literature

Three basic elements of automatic lubrication

A four-page bulletin covers the three basic elements of automatic lubrication: lubricators, distribution systems, and meter-units. Each is described and illustrated in turn. Eight types of lubricators are illustrated, with a basic description of a typical pump and reservoir assembly. A cut-away view is included in explanation of meter unit operation.

"The ABC of Modern Lubrication" is issued by Bijur Lubricating Corp., Dept. FP, 151 W. Passaic St., Rochelle Park, N. J. When inquiring specify FP 2468 on handy form, pages 2 and 3.

Provides specs on exhaust fans

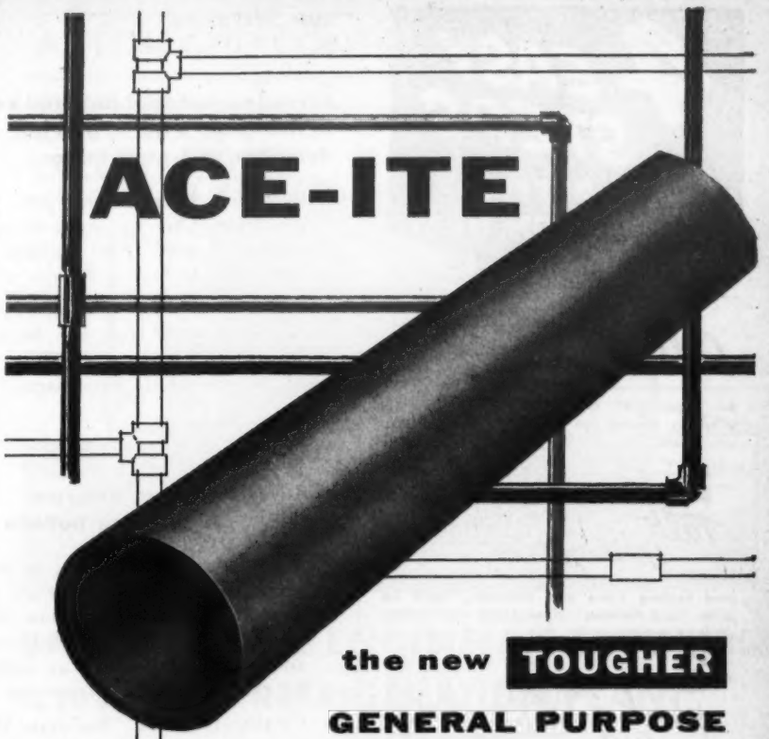
Axial flow, direct-connected exhaust fans are fully illustrated with performance charts, specification sheets, and application data in 8-page bulletin.

Bul 500 is issued by M & E Manufacturing Co., Dept. FP, 2571 Winthrop Ave., Indianapolis 5, Ind. When inquiring specify FP 2469 on handy form, pages 2 and 3.

Platform trucks, dollies, described in illustrated 64-page catalog

A wide selection of floor trucks is described and pictured in a 60-page catalog. Full data is conveniently listed covering two-wheel hand trucks as well as shelf, tray, box, and wagon types. Skids, dollies are also included.

Catalog No. 100 is issued by The Hamilton Caster & Mfg. Co., Dept. FP, 1700 Dixie Highway, Hamilton, Ohio. When inquiring specify FP 2470 on handy form, pages 2 and 3.



the new TOUGHER GENERAL PURPOSE PLASTIC PIPE

ACE-ITE is a new moderately priced rigid plastic pipe with exceptional impact strength and toughness . . . handles most corrosive fluids in your plant at moderate temperatures and pressures.

For piping most inorganic acids, salts, alkalis and many organic chemicals, it's the equal of plastics that cost far more. ACE-ITE maintains good strength, rigidity and chemical resistance from minus 40 deg. F. to 170 deg. F. Light in weight, it is odorless, tasteless, non-contaminating. Saves cost of painting, immune to electrolytic corrosion and bacteria. Available in pipe sizes from ½" to 6", standard and extra-heavy, with wide variety of fittings.

ACE-ITE is only one of eight types of rubber and plastic pipe now offered by American Hard Rubber Company. Write today for free technical Bulletin 80.

ACE rubber and plastic products

AMERICAN HARD RUBBER COMPANY

93 WORTH STREET • NEW YORK 13, N. Y.

When inquiring check FP 2471 on handy form, pgs. 2-3

4 EASY STEPS TO BETTER PRODUCTION HEAT

1 Call in

the experienced Chromalox Electric Heating Specialist serving your area. He's as near as your phone.

2 Talk over

your heating plans and problems. You'll be given "case histories" of successful applications similar to your own.

3 Work out

the details of your application with the Chromalox Heating Specialist. Tell him what you want to accomplish in the way of results.

4 Follow Through

on the recommendations. Order the Chromalox Electric Heaters and controls needed for your application. You'll be more than pleased with the time, money and material saving results you'll get with Chromalox Electric Heat!

At Your Service

A STAFF OF EXPERIENCED APPLICATION ENGINEERS

SEND FOR "101 WAYS" HANDBOOK and address of Chromalox Engineer serving you.

A-4431

EDWIN L. WIEGAND CO., Industrial Division
7611 Thomas Blvd., Pittsburgh 8, Pa.

☐ Send me 101 Ways to Apply Electric Heat handbook.
☐ Have a Chromalox Heating Specialist call

Name.....
Company.....
Street.....
City.....Zone.....
State.....

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

When inquiring check FP 2472 on handy form, pgs. 2-3

new literature

Corrosion-resistant jacketed kettles in sizes from 5 gal to 300 gal described in 8-page folder

Illustrated 8-page folder gives dimensions and specifications for five styles of corrosion-resistant, jacketed kettles. Also includes description of flush-type plug valves for use with the kettles.

Bulletin No. 1, "Corrosion-Resistant Kettles", can be obtained from Lee Metal Products, Inc., Dept. FP, Philipsburg, Pa. When inquiring specify FP 2473 on handy form, pages 2 and 3.

Multi-colored flow diagram highlights evaporator bulletin

Vertical rapid circulation milk evaporators of centrifugal and unit types are described in 16-page bulletin. Includes flow diagrams in full color, information on compressors, preheaters, and automatic controls as well as descriptions of various capacity evaporator units.

Catalog No. 364, "Buflovak VRC Milk Evaporators", is issued by the Blaw-Knox Company, Dept. FP, P.O. Box 1198, Pittsburgh 30, Pa. When inquiring specify FP 2474 on handy form, pages 2 and 3.

Different size and shape articles packed in telescopic carton

Adjustable shipping container comes in eight sections which are grouped around bundle of dissimilar articles to be shipped. Sections telescope together tightly and are secured by steel strapping. Illustrated 4-page folder shows with photos how container is used. Includes dimensions for the three sizes of container offered.

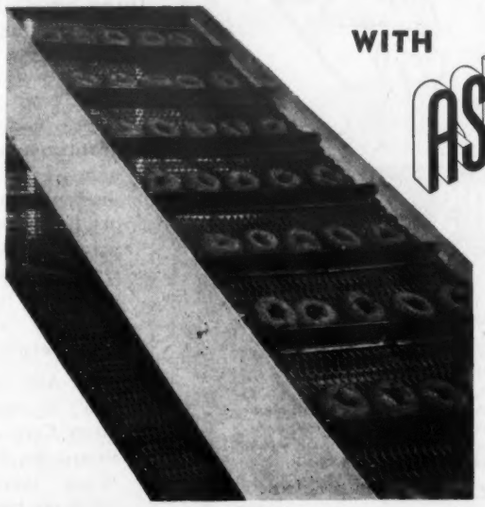
Folder on "Adjusta-Pak" can be obtained from the Signode Steel Strapping Co., Dept. FP, 2600 N. Western Ave., Chicago 47, Ill. When inquiring specify FP 2475 on handy form, pages 2 and 3.

Shell-and-tube type liquid chiller features straight-through flow

Multi-pass heads at ends of this chiller provide unobstructed refrigerant circulation. Velocity of tube fluid is controlled by one of five standard baffle spacings provided to produce most efficient heat transfer.

Illustrated 8-page catalog outlines important features of this unit, includes specifications and

Keep your product on the move WITH ASHWORTH PROCESS BELTS



You can combine processing and product movement, whether it be doughnuts or dog biscuits, pickled beets or fried fish, potato chips or frozen rabbit, Ashworth can help make savings in production.

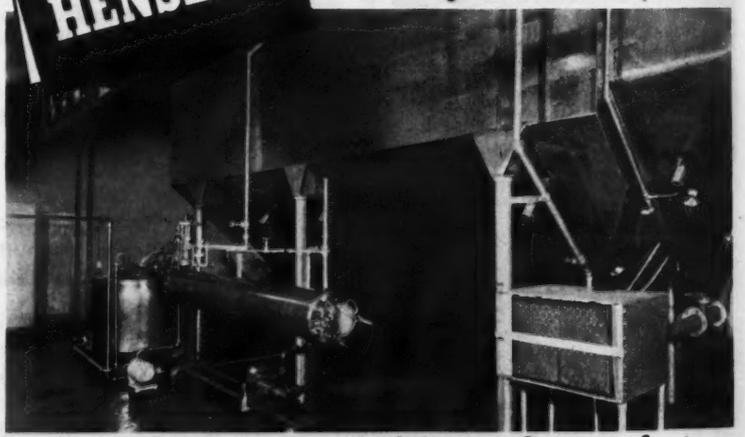
ASHWORTH BROS., INC.
METAL PRODUCTS DIV. • WORCESTER MASS

Sales Engineers: Buffalo • Chattanooga • Chicago • Cleveland • Detroit • Kansas City • Louisville • Los Angeles • New York • Philadelphia • Pittsburgh • Rochester • Seattle • St. Paul • Tampa
Canadian Rep., PECKOVER'S LTD. • Toronto • Montreal

WRITE FOR ILLUSTRATED CATALOG P52

When inquiring check FP 2476 on handy form, pgs. 2-3

HENSZEY SPRAY DRYER with Horizontal Air Suspension



powder kept suspended by exclusive design

- Powder Air Conveyed . . . no scrapers
- Stainless steel powder collectors — 99.5 % efficiency
- 7 second drying time
- Single or multiple interchangeable nozzles — for coarse or standard powder
- Steam coils or gas fired
- 2,000 lbs. capacity per hour
- Heavy-gauge welded stainless steel walls
- Minimum installation time . . . pre-tested

HENSZEY COMPANY DEPARTMENT F WATERTOWN, WISCONSIN

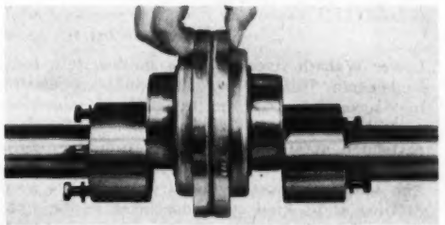
When inquiring check FP 2477 on handy form, pgs. 2-3

selection procedure for proper size unit for any application. Construction details are also listed.

Catalog No. 600, "Dry-Ex Liquid Chillers", is issued by Acme Industries, Inc., Dept. FP, 600 N. Mechanic St., Jackson, Mich. When inquiring specify FP 2479 on handy form, pages 2 and 3.

Process motors and pumps connected by easily installed coupling

A flexible shaft coupling that offers simplified installation and maintenance in addition to characteristic advantages is described in a four-page illustrated service manual. Manner in which installation or removal is accomplished without disturbing driving or driven unit is explained. Coupling is prelubricated and only maintenance is addition of lubricant at 6 month intervals.



Illustrations include view of completely disassembled coupling and action photos that show step-by-step procedure for installation or removal.

"Steelflex" Type F spacer coupling manual is issued by The Falk Corp., Dept. FP, 3001 W. Canal, Milwaukee 8, Wis. When inquiring specify FP 2480 on handy form, pages 2 and 3.

Up to 300 doz tortillas per hour produced by new streamlined oven

Completely automatic tortilla oven is described, illustrated in a four-page bulletin. Oven is designed for cooler, safer, and easier operation. Chains and gears are carefully shielded while porcelain enamel covers various working parts, reducing time required for clean-up. View of unit, with enclosures removed, reveals over a dozen advanced operating features such as a conveyor transfer which eliminates hooks and sliding chutes. Production capacity of unit in between 220 and 300 dozen daily.

Bulletin on the Imperial TO-2400 tortilla oven is issued by the J. C. Ford Mfg. Co., Dept. FP, 548 So. Monterey Pass Road, Monterey Park, Calif. Specify FP 2481 on handy form, pgs. 2 & 3.

KLENZADE

COMPLETE SANITATION PROGRAMS For All Food PROCESSING PLANTS

★ Tops for Tough Cleaning Jobs

Klenzade "CBS" Cleaner is the finest industrial detergent available. Superb balance and high wetting agent content provide excellent soil penetration, fat emulsification, and free rinsing.

★ High Temperature Cleaning

Klenzade Flash-Kleen is ideal for steam cleaning jobs. Strips "baked-on" soil residues quickly with the Klenzade Steam Cleaner.

★ Controlling Mineral Deposits

Klenzade Flash-Klenz removes and prevents lime film on canals, troughs, fillers, chutes, etc. Use the Klenzade Alternate System of Cleaning employing alkaline and organic acid detergents.

★ Chlorine Sanitization and Water Treatment

Use Klenzade XY-12 Liquid Sodium Hypochlorite for thorough fast action. Control-packaging in ready-to-use solution. No pre-dissolving — no "pin-point corrosion." Choice selection of chlorine application equipment.

Plant Sanitation Surveys On Request

KLENZADE

"ALL OVER AMERICA"

KLENZADE FIELD SERVICE

A Klenzade field service technician will gladly call on you and help you plan a complete plant sanitation program.

KLENZADE PRODUCTS, INC.

Offices in Principal Cities

BELOIT, WISCONSIN

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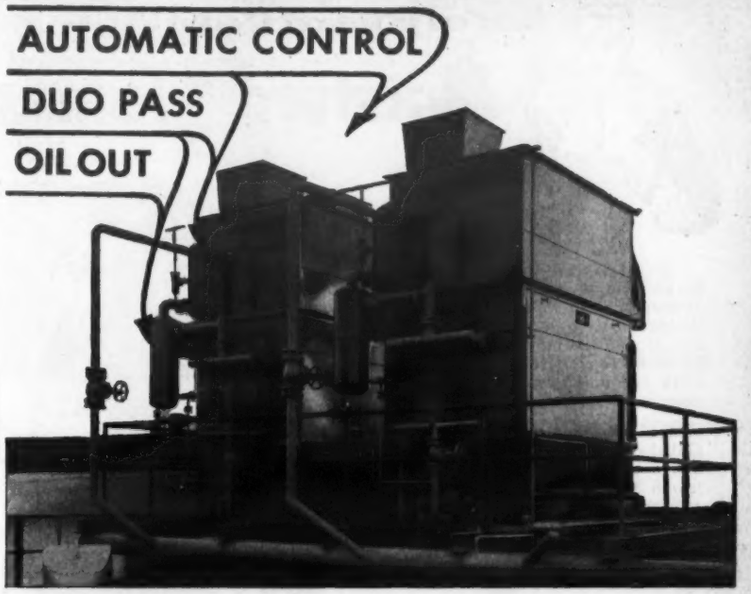


SAVE HALF THE ENGINEER'S TROUBLES ...WITH A REFRIGERATION PLANT

Hundreds of engineers have been interviewed about their experience with the Niagara Aeropass Condenser. In one way or another, they say, "I wouldn't go back to anything else." And their managers, who watch the costs, say, "Best investment we ever made, couldn't operate now, without it."

Niagara Aeropass Condensers have three exclusive features which save trouble and money in running a refrigeration plant:

"The Duo-Pass"— keeps scale and salts from crusting the coils, keeps the condenser always at full capacity.

The "Oilout"— removes oil and dirt from the refrigerant, at the exact point where the oil vapor is condensed and the refrigerant is not.

The "Balanced-Wet-Bulb" control gives automatic operation at the minimum head pressure, saving power cost the year 'round!

In addition, the Niagara Aeropass Condenser saves nearly all your cost of cooling water, quickly bringing back to you the cost of installation. In plants where refrigeration is a production process, owners know that this condenser has reduced their costs.

Write for Bulletin 103; Address Dept. FP

You can see one of these installations near you.

NIAGARA BLOWER COMPANY

405 Lexington Ave. New York 17, N. Y.

District Engineers in Principal Cities of United States and Canada

When inquiring check FP 2482 on handy form, pgs. 2-3

Safely Ventilate . . . Moisture and Fumes

Gallaher Air-Van Direct Drive 150-11,000 CFM S. P. to 4.2"

Gallaher Belt Drive 5,000-65,000 CFM S. P. to 4"

In addition to having the motor out of the airstream, fresh clean air is constantly drawn through the motor hood creating an air curtain around the motor shaft which absolutely prevents fumes from entering the housing while the unit is in operation.* This eliminates most special winding motors.

Where high slot speeds must be maintained Gallaher Air-Vans with patented scroll effect design are generally the answer. Design research has shown that without this feature efficiency against even ¼" S.P. is impossible. Gallaher units develop up to 4" static pressure and 65,000 CFM. Ratings have been certified in an independent laboratory under the direction of a nationally recognized authority.

Other features include low silhouette, weatherproof design, low noise levels, and availability in special metal and finishes, shipped as a complete package ready for installation. *patented exclusive features.

The GALLAHER Company

4108 Dodge Street **Omaha 3, Nebraska**

When inquiring check FP 2483 on handy form, pgs. 2-3

COMPLETE Jacketed Pipe and Fluidometer Systems

for all liquid-handling problems

● In any processing operation where the maintenance of a uniform temperature in the process pipes is necessary, a Hetherington & Berner jacketed system will assure dependable, economical production. This is equally true regardless of whether the material being handled requires a hot or cold temperature, what heating or cooling medium is used, or whether the material is corrosive or non-corrosive. Write for Bulletin J-50. If you have a liquid batching problem, involving either light or heavy liquids, jacketed or unjacketed construction, investigate the *Fluidometer System.* This system gives accurate, dependable and *completely automatic* batching and is adaptable to practically any liquid measuring problem, whether it involves gallons, barrels or tank cars. Write for Bulletin Fl-49.

H&B ESTABLISHED 1869

HETHERINGTON & BERNER INC.

757 KENTUCKY AVE. **INDIANAPOLIS 7, IND.**

When inquiring check FP 2484 on handy form, pgs. 2-3

Industry News

(*Continued from page* 11)

Jaxon O. Hice, founder and head of SeaPak Corp., St. Simons Island, Ga. has resigned to become president and general manager of the former Shoreline Packing Corp., Tampa, now known as Shoreline Enterprises of America, Inc. Mr. Hice joins forces with his younger brother, Billy D. Hice, who built the Tampa plant and is vice president in charge of production.

Innovations at the Shoreline plant include perfection of the first mechanized machines which mechanically peel and devein shrimp after they have been machine-sorted into six sizes.

Magnus, Mabee & Reynard, Inc. entertained over 800 guests at a cocktail party on the Starlight Roof, Waldorf-Astoria, New York, March 5. Colorful oriental decorations symbolized the world-wide activities of the company which embrace over 70 countries.

Florasynth Fellowship Award, administered by the Institute of Food Technologists, has been increased from $500 to $1000. The award is made each year to a student of Food Technology in a recognized college of the US or Canada. Interested parties may write the Institute at 176 West Adams St., Chicago 3.

Lower Wabash river valley in southwestern Indiana and southeastern Illinois is recommended as excellent area for "successful establishment" of food industries. Survey made by Chicago & Eastern Illinois Railroad points to particular opportunities for companies producing prepared meats, sugar, chocolate, cocoa, and oleomargarine. The 460-page report of the survey is said to be the most detailed of its kind ever undertaken in the area. It was prepared by Arthur Longini, chief economist for the railroad.

C & C Super Corp. has acquired Lorraine Mfg. Corp., Maywood, N. J. which now becomes the Lorraine Division. It will continue manufacture of specialized rubber parts and in addition will make, especially for C & C Super Coola soft drinks, a new type of closure for bottles and cap-top cans. It utilizes a special type of rubber instead of a cap lining of cork.

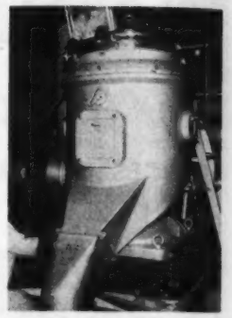
Annual consumption of dog food is at the rate of 1,250,000,000 lb units—dry types at 825,000,000 lb. These figures are cited by Harold P. McGrath, general manager of Gaines Dog Food Division of General Foods. He also pointed out that investigations in various parts of the country indicate that 82% of dog-owners use some commercial dog food at least part of the time.

Jervis W. Babb, president of Lever Bros. Co. since 1950, has been elected chairman of the board. William J. Burkhart, executive vice president since 1953, becomes president.

Swift & Co., opened a new adhesive plant at Dallas, Texas. It will service both ordinary and specialized requirements of industry. W. C. Loeffel, with Swift's adhesive sales since 1947, will manage the new installation.

"Cel-O-Seal" bands will now be distributed on the West coast by Armstrong Cork Company which has long been distributor for this du Pont product in most other areas of the country.

TITAN Self De-Sludging CENTRIFUGALS Completely Automatic!



GIVE YOU 3 BIG ADVANTAGES

SELF DE-SLUDGING TITAN Centrifugals in use for 25 years are at work in many different industries, throughout the world. Food, beverage, pharmaceutical, fuel oil, chemicals, fats and vegetable oils are just a few of the industries which have solved their centrifuging problems by installing SELF DE-SLUDGING Titan equipment. For centrifuging at its best, put a Titan on test!

1 **ELIMINATE PRODUCTION DOWN TIME:** The Titan Centrifugal DE-SLUDGES itself, automatically, at predetermined intervals. Costly production down time for bowl cleaning is eliminated . . . your production is therefore continuous, uninterrupted.

2 **REDUCED LABOR COSTS:** The cost of labor required to handle messy, time-consuming job of periodic cleaning of centrifugal bowl is eliminated. With no bowl cleaning, maintenance of centrifugal operation is greatly simplified, cost of maintenance substantially less.

3 **PRODUCES UNIFORM PRODUCT:** Automatic SELF DE-SLUDGING prevents build-up of impurities in centrifugal bowl. If allowed to accumulate, these impurities can cause product flavor, for example, to vary greatly from beginning to end of production run. Lack of product uniformity was a serious problem for many food, beverage and chemical processors until they installed SELF DE-SLUDGING Titans.

Send today for complete technical information. Be sure to state your application.

Address Dept. FP

PITMAR CORPORATION

Executive Offices: 10 E. Fayette St.
Service Department: 4005 Ritchie Highway
BALTIMORE, MARYLAND

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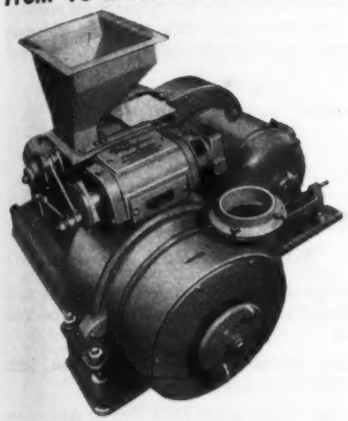
100 PULVERIZING SETUPS

From 40 mesh to 5 microns



with the

SCHUTZ-O'NEILL PULVERIZER

The Schutz-O'Neill "Superfine" Pulverizer is adaptable to the complete range of pulverizing from coarse to ultra fine. Ease of grinding and versatility of this unit are two features not found in any other pulverizer on the market. With proper adjustments, this mill will produce particles from 40 mesh to low micron sizes under conditions that enable you to accurately control not only particle size but also the size distribution in the product.

Here is a proven, automatic and dustless method of pulverizing any grindable material to your desired fineness. The principle of centrifugal impact with air attrition utilized so efficiently by the Schutz-O'Neill "Superfine" Pulverizer has been proven by more than 60 years of experience and has never been surpassed. Accessibility is excellent for change of set-up, cleaning or replacement.

We'll test-grind a sample of your stock

What is your milling problem—uniformity? fineness? increased output? lower cost? Tell us the stock you want to pulverize, fineness, capacity desired. We'll send shipping instructions. You will receive your processed product and our Engineering Test Report giving exact data. No obligation to you.

Write for literature on Schutz-O'Neill Pulverizers.

ESTABLISHED 1893

SCHUTZ-O'NEILL COMPANY

341 PORTLAND AVENUE
MINNEAPOLIS 15, MINNESOTA

When inquiring check FP 2486 on handy form, pgs. 2-3

ASSOCIATION NEWS

Trade Associations
Technical Societies

The American Medical Association has voted to discontinue the acceptance programs of its Councils, including Council on Foods and Nutrition. In addition to not issuing any new acceptances it now discontinues listings of all previously accepted products. Use of any seal, emblem, or statement indicating that a product or statement is accepted by the American Medical Association or any of its Councils or Committees shall not be permitted in advertisements in American Medical Association publications after June 15, 1955. Revised methods of operation are to be announced shortly in which development of processed foods and appropriate promotion will be encouraged.

New president, National Preservers Association is W. Kyrel Meschter of The American Preserve Co., Philadelphia. Other new officers are J. N. Major, Jr., Old Virginia Packing Co., Front Royal, Va.; Paul H. Smucker, The J. M. Smucker Co., Orrville, Ohio; A. H. Blount, Tea Garden Products, San Leandro, Calif., vice presidents. John C. Fosgate, Chester C. Fosgate Co., Orlando, Fla., was re-elected secretary-treasurer.

The Association is raising a fund of $30,000 for a publicity and public relations program.

More than 75,000 contestants took part in the recent National Cherry Pie Baking Contest sponsored by the National Red Cherry Institute, reported William B. Powell, executive secretary of the organization. This event is a regular feature of the yearly meetings.

New officers of the Institute are: President, B. F. Batcheler, General Manager, Fruit Growers Co-operative, Sturgeon Bay, Wis.; Vice-president, H. B. Pearson, Alton Canning Co., Alton, Ill.

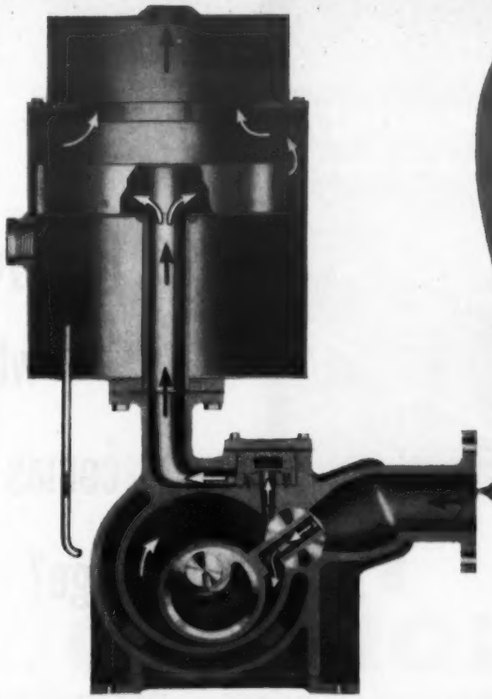
National Cranberry Association has named Marcus Havey production manager of all Ocean Spray canning plants in the US and Canada. His headquarters will be at the North Chicago, Ill. plant which he has managed for the last 14 years.

Canning Machinery & Supplies Association has re-elected E. N. Funkhouser, Jr., Dewey and Almy Chemical Co., president; C. K. Wilson, Food Machinery & Chemical Corp., vice-president at the organization's recent convention. Exposition attendance was 8718. Of these, 3655 were processors.

The National Independent Meat Packers Association will hold its fourteenth annual meeting at Palmer House, Chicago, April 23-27. Eighty-seven exhibiting companies have reserved one hundred and nine booths. Association headquarters are at 740 11th St., Washington 1, D. C. John A. Killick is executive secretary.

Glass Container Manufacturers Institute reports that "glass container shipments have increased more rapidly than the advancing packaging industry as a whole" — and that shipments to food processors were 43% of total industry shipments last year. There was a gain of 6.6% in shipment of non-deposit soft drink bottles. Use of half-gallon and gallon milk bottles increased 30% during 1954.

(*Continued on next page*)



VACUUM PACKAGING
VACUUM DEHYDRATION
VACUUM FUMIGATION
VACUUM CONCENTRATION
VACUUM FOR PACKAGE HOLDING
VACUUM RESEARCH
VACUUM FOR THE LABORATORY
VACUUM FREEZE-DRYING
VACUUM FILTRATION

HAVE YOU INVESTIGATED VACUUM?

Vacuum by Kinney Pumps is a primary processing tool in the food industry. Many processes depend on Kinney Pumps to produce high vacuums (10 microns or better) at high speeds — for laboratory, pilot plant, and production work. Scores of other food processes requiring "soft vacuums" (25" to 29" Hg. abs.) profit by the wear-free, maintenance-free performance of these long lived pumps.

Whatever your vacuum requirement, Kinney has the pump to serve your needs. The Kinney line includes 13 single stage and compound models plus the new 1200 cu. ft. per min. Model KMB Mechanical Booster Pump. All models are available with gas ballast and other engineered systems for solving the water-vapor problem. District offices in Boston, New York, Philadelphia, Chicago, Cleveland, and Los Angeles are all competently staffed to discuss vacuum with you. For Bulletin V-54 write Kinney Manufacturing Division, The New York Air Brake Company, 3571 Washington Street, Boston 30, Massachusetts.

Kinney

When inquiring check FP 2487 on handy form, pgs. 2-3

Have you wondered why this magazine comes to you ...without charge?

MAYBE, LIKE MANY others, you've always thought that all publishers make their money, or much of it, from the subscriptions they sell.

'Tisn't so . . .

. . . no, 'tisn't so. With the exception of a few general magazines (e.g. READER'S DIGEST) that sell hundreds of thousands – some millions of copies – most industrial publishers with relatively small circulations actually lose money on their subscription sales.

Then how do industrial publishers make money? As you can guess, they make it from the advertising they sell. *Total subscription sales are hardly a "drop in the bucket" compared to advertising revenue.*

Advertisers demand best coverage

Since advertisers pay the bills, they demand best possible coverage of all important men in the field. So it's up to the publisher to publish the most readable magazine possible . . . then to insure coverage of the maximum number of the best readers.

You can't do that by selling subscriptions – sales costs are high – a large share of the subscribers cancel each year – and no matter how much time, money, and pressure is used there are always some of the important men who will never buy.

As you can see, the most effective method of getting the kind of coverage advertisers want is (a) to hand-pick the most important men; (b) send the magazine to ALL these men; and (c) to make the magazine so interesting, so valuable that they will want to read it.

That's why . . .

That's why Food Processing is sent only to qualified readers . . . selected management and technical key-men in the food industry; that's why you get Food Processing free – that's why we spend thousands of dollars on each issue to make it worth your time to read it. For you are an important reader in the food processing field.

Food Processing

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Creators of PUTMAN-STYLE Magazines
. . . terse, vital editorial; "hand-picked" circulation; square, high-visibility format; quality readership; hence more READER ACTION

PUTMAN PP PUBLISHING

ABP

NBP

(*Continued from preceding page*)

Mayonnaise and Salad Dressing Manufacturers Association has selected June 23-July 2 for this year's Mayonnaise and Salad Dressing Week promotion.

Predictions of a revolution in planting methods and patterns were made at the Wisconsin Canners' Raw Products Conference held at University of Wisconsin. Wisconsin Canners has appropriated funds for research on precision planting. The University has been asked to undertake the research using the experimental pea planter developed by the John Deere Co.

Convention and Exhibit

Schedule 1955

Apr. 13-15. Biological Waste Treatment Conference, Civil Engineering Department, Manhattan College, New York 71, New York.

Apr. 18-21. AMA National Packaging Exposition, International Amphitheatre, Chicago, Ill.

Apr. 23-27. National Independent Meat Packers Association, Annual Exposition and Meeting, Palmer House, Chicago.

Apr. 24-27. National Fisheries Institute, Roosevelt Hotel, New Orleans, La.

Apr. 28-29. Pennsylvania Manufacturing Confectioners' Association, 9th Annual Production Conference, Franklin and Marshall College, Lancaster, Pa.

May 1-5. American Society of Brewing Chemists, Hotel Bellevue-Stratford, Philadelphia, Pa.

May 15-19. American Association of Cereal Chemists, Annual Meeting, Chase Hotel, St. Louis, Mo.

May 16-20. National Materials Handling Exposition, International Amphitheatre, Chicago, Ill.

May 22-25. Flavoring Extract Manufacturers' Association of the United States, 46th Annual Convention, Edgewater Beach Hotel, Chicago, Ill.

June 6-9. National Confectioners Association, Annual Convention and Exposition, Conrad Hilton Hotel, Chicago.

June 12-15. American Society of Agricultural Engineers, 48th Annual Meeting, University of Illinois, Urbana.

June 12-16. Institute of Food Technologists, Hotel Deshler-Hilton, Columbus, Ohio.

June 20-22. Grocery Manufacturers of America, Inc., 1955 Mid-year Meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 21-23. American Dairy Science Association, Michigan State College, East Lansing, Mich.

July 12-14. Western Plant Maintenance & Engineering Show, Pan Pacific Auditorium, Los Angeles, Calif.

Aug. 15-19. American Society of Agronomy and Soil Science Society of America, University of California, Davis.

Sept. 5-9. American Society for Horticulture Science, Michigan State College, East Lansing, Michigan.

Oct. 1-6. 1955 Baking Industry Exposition, Convention Hall, Atlantic City, N. J.

Oct. 21-*Nov.* 2. Packaging Institute Forum, Hotel Statler, New York, New York.

Nov. 16-18. Grocery Manufacturers of America, Inc., 47th Annual Meeting, Waldorf-Astoria Hotel, New York.

discussed in this issue

PROCESSES, EQUIPMENT, and MATERIALS

Use this "quick-locator" when you want information on a specific type of process, equipment or material mentioned in the processing stories or the advertisements in this magazine. Everything discussed in this issue is given here, if you want more data you can write manufacturer direct . . . or turn to pages 2 and 3 and use the handy "Information Request Slip." This is a special service provided by the publisher . . . no obligation or charge, of course. The publisher contacts the proper manufacturers for you—information comes to you direct.

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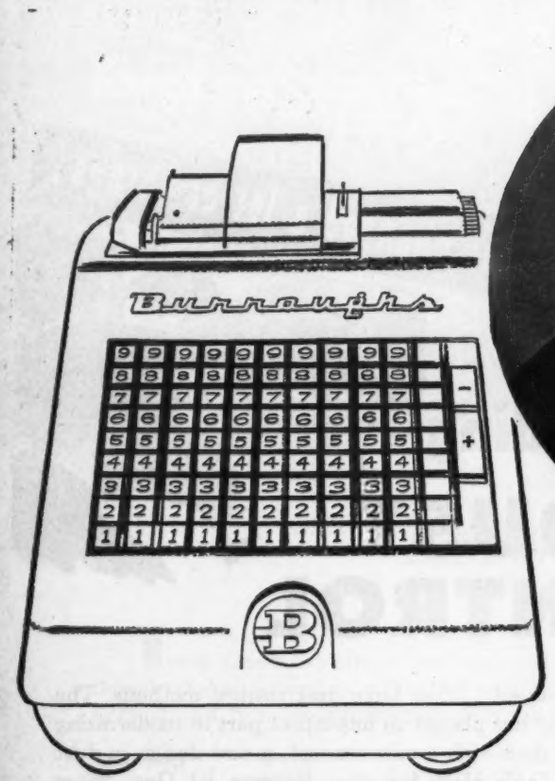
When inquiring check FP 2488 on handy form, pgs. 2-3



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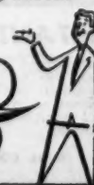

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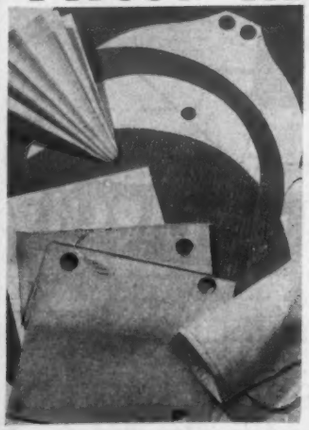

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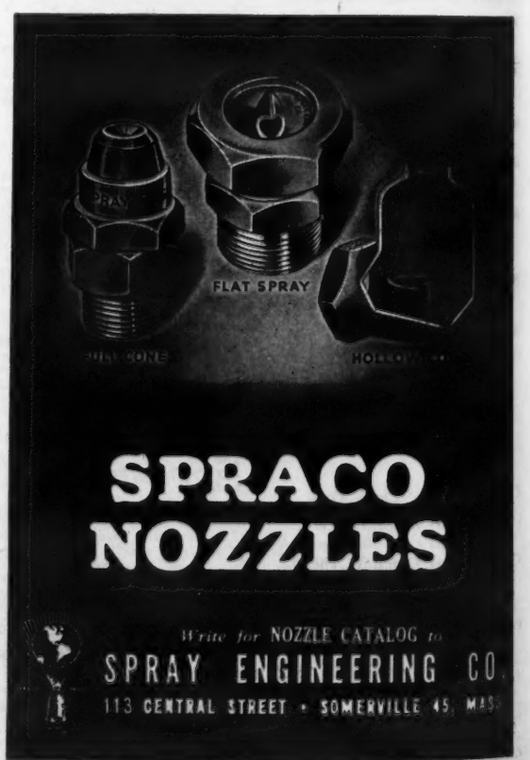

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"THAT'S INTERESTING"

(Continued from page 2)

Mr. Sandman — you brought it!

General Motor's new "dream" truck is designated as "L'Universelle" to signify its all-purpose design. It is the first truck in history to have exclusively front-wheel drive. This GMC creation is 10" lower and 10" shorter

GMC "dream" truck with front-wheel drive

than current panel units yet has greater cu ft capacity and load floor height only half that in use today.

Under a 1000 lb load 54% of gross vehicle weight is carried on front wheels. Vehicle has exceptional maneuverability and control on turns. Absence of any hood and panorama windshield assure unusually fine visibility.

Milk from cows — reindeer, trees

How would you like to buy your milk in chunks? Laplanders think it's okay. Half-wild reindeer provide their milk supply that is kept frozen all winter in chunk form. Another group who are independent of the cow are the African Bedouins and Somalis who drink the sweet milk of camels. Then, of course, there's milk from trees — not only that from the coconut — but milk from the "cow trees" of Latin America. (National Geographic News Bulletin — National Geographic Society, Washington 6, D. C.)

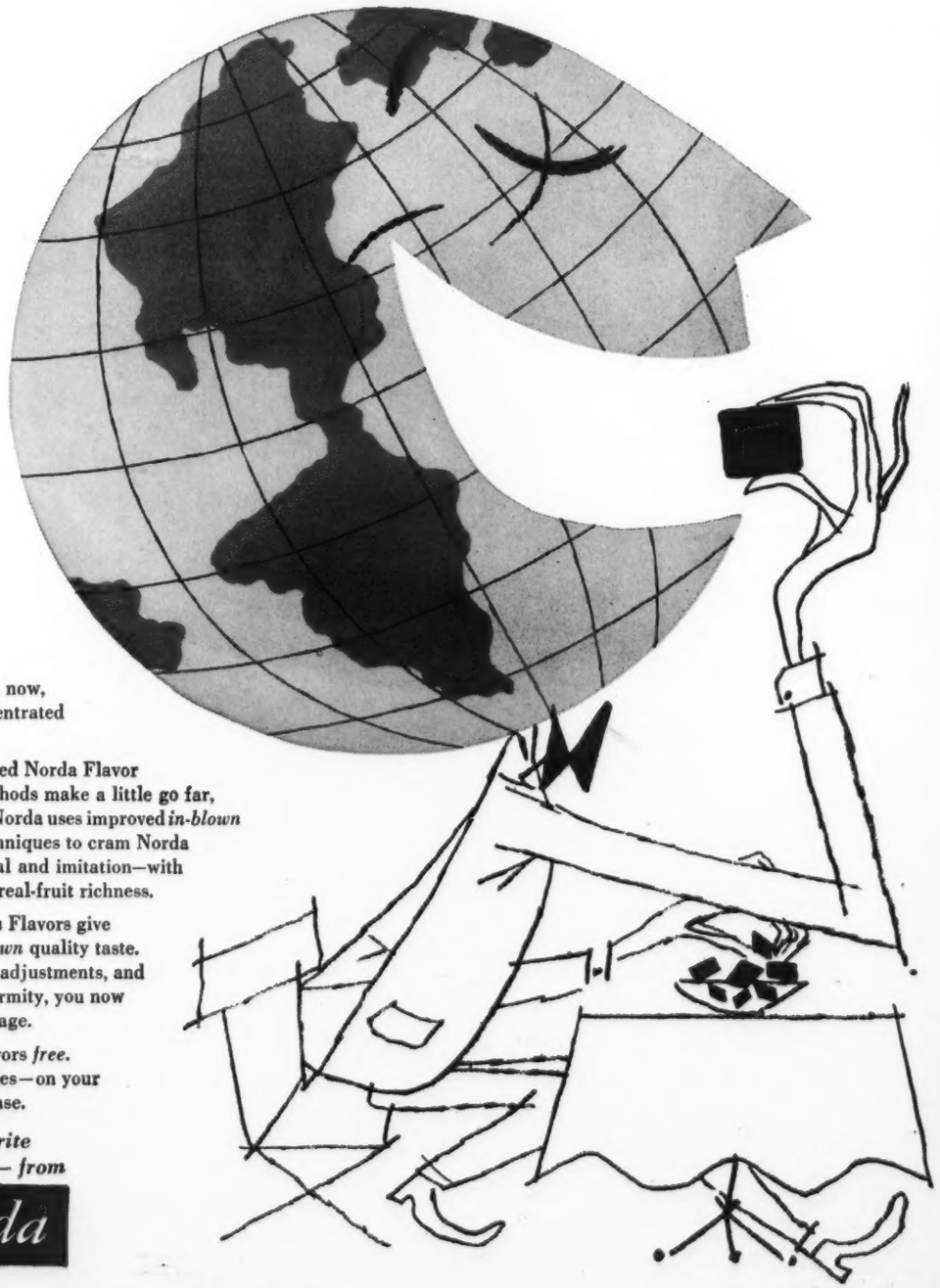
Universal stainless steels

Universal stainless steels, developed jointly by Michigan Steel Casting Co. and WaiMet Engineering Co., are being made available to the precision foundry industry. Benefit to users of the master alloys, the makers say, will be in reduction of inventories. (Industrial Research Newsletter).

Wait a minute — ?

Otis Elevator Company researchers have found that most people don't mind waiting 30 seconds for an elevator, but that when the interval approaches a minute patience wears thin. As skyscraper height increases, reduction of costly space required by elevators will become a more important factor. One idea calls for a stream of cars going up one shaft and coming down another. Safety devices would overcome cars overtaking each other.

Here's a grape in perfect shape to flood your foods with flavor!



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Special advanced Norda Flavor processing methods make a little go far, and go better. Norda uses improved *in-blown* production techniques to cram Norda Flavors—natural and imitation—with bursting, true, real-fruit richness.

Norda *in-blown* Flavors give foods an *in-grown* quality taste. Delicate flavor adjustments, and complete uniformity, you now can easily manage.

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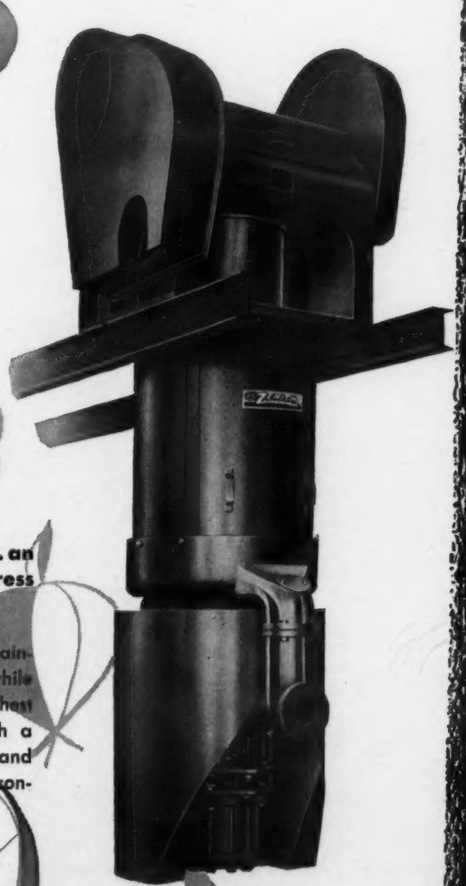
fruit, fish or vegetable



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- *Extracting juice from pineapples, shredded vegetables and tomato pomace.*
- *Dewatering citrus and pineapple canning by-products for ultimate use as stock feed.*
- *Dewatering germ and fiber in corn starch plants.*
- *Extracting water and oil from cooked whole fish and fish wastes in fish reduction plants.*

Some other applications of J-C presses in the chemical and food fields include *pressing reclaimed rubber, alkali-cellulose, paper pulp, sugar beet pulp, tobacco by-products and coffee grounds.*

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